The Northwestern MILLER

MILLING PRODUCTION SECTION

ASH Versus... BAKING

The baker should consider rewriting his specifications in regards to ash to make the requirements more realistic . . .

By Frank R. Ofner

**President, Industrial Processes, Inc.
Portland, Ore.**

THE ash content of flour has long been a ruling element of quality imposed by the baker on the miller. In recent years there has been considerable agitation and argument against the use of the percentage of ash in the flour as a quality indicator.

Ash as a part of the flour specifications dates back to the time of the stone grinding wheels. Cleaning processes of the time were not, of course, of present day standards, but the ash content of the flour must have been important or it would not have been used. The baker and miller knew, and know now, that flour in its purest form has an ash content. It is very unlikely that this basic ash had enough importance by itself to have been established as a major factor of flour milling specifications. The designated ash had to have a definite connection with flour baking quality and uniformity to have been adapted by the industry.

As the mills progressed in modernization, the miller has increasingly stressed more gentle treatment of the wheat berry in the conditioning of wheat prior to milling. The purpose has been to prevent roughing the bran coat, to leave a tough pliable bran to work on, and to procure a mellow endosperm for more complete removal of the flour which produces a better baking quality and results in a longer extraction or higher yields.

Importance of Washing

The washing of wheat has been found to be one of the best means of improving the conditioning as proper washing reduces ash by removal of the dirt and bran dust, provides uniform absorption of moisture, and conditions the bran coat. Improper whizzing action causes the formation of those little "tits" that are reminiscent of the dried out artichoke.

Roughing of the bran coat by too much dry scouring, insufficient washing, or insufficient removal of dirt particles affects the baking qualities of the flour. The hair-like ends of the "tits," caused by rough treatment of the bran, dry out rapidly when moved from the final temper or washer to the prebreak or first break. Here they shatter in particles as fine or finer than the material in the flour streams. Invariably some of these pieces find their way into the streams, increasing the ash and lowering flour color with a corresponding decrease in patent yields and baking qualities. Dirt from the fields, clay particles, and the like, in the form of dust adhere to the grain, and are fine enough to go into the flour streams with similar results as with the bran "tits."

The third factor, which has been touched on lightly in the past, should be highlighted here; namely, the presence of fairly large amounts of bran dust (reddish in color) in wheat when received by the mill. That bran dust is present in sizeable quantities is borne out by recovery of the washer water solids and an analysis of the material for ash, vitamins, fat and protein content. When the number of times the grain has been moved in a spout from the farm to the mill elevator is considered, the large quantity of bran dust should not be surprising. In a spout, the grain near the outer periphery moves rather slowly in comparison with the center grain (somewhat in the form of an elongated cone) causing damaging attrition. The rubbing of grain on grain, or more correctly, of bran coat on bran coat, a peeling action, can only produce bran dust, which is of even smaller particle size than most flour. With molecular attraction and paste formations which occur in tempering or inadequate washing, this bran dust is in a position to be another element to add ash with the same results as were found with dirt and bran "tits."

Common Base

The early importance attached to ash content of bread flour and the importance of proper conditioning to baking qualities of that flour, must have a common base.

It is reasonable to assume that the baker originally used ash content as a guide to the milling practices and baking qualities of the flour. Inherent ash might have some effect, but probably is relatively unimportant when compared to the gluten strength, protein, etc. The ash in question is that which is directly associated with the ash content of the bran. All of the claims for gentle, thorough cleaning and conditioning or tempering bear this out. The ash, then, that was originally important to the baker must also have been, consciously or otherwise, an indication to him of the baking qualities, not as ash itself, but as a measure of the added bran particles.

To test this theory, two series of test bakes were made. (See Chart I, Bran Dust, and Chart II, Bran and Dirt Dust.)

CHART I—BRAN DUST

Sample	% Abs	Ferm Time (Min)	Proof Time (Min)	Mix Time (Min)	Dough Char	—Crust— Color	Char	—Crumb— Color	Grain	Texture	Volume (CC)
Straight grade	66	175	64	2½	N	10	10	10	10	10	2975
Straight grade	66	175	64	2½	N	10	10	10	10	10	2925
Straight + 1% bran	66	175	63	2½	S1Slack	10	9	8 spec	10	10	2975
Straight + 1% bran	66	175	63	2½	S1Slack	10	9	8 spec	10	10	2925
Straight + 2% bran	66	175	64	2½	N	10	9	6 spec	9	9	2975
Straight + 2% bran	66	175	64	2½	N	10	10	6 spec	9	9	2900
Straight + 3% bran	66	175	63	2½	S1Sticky	10	10	4 spec	6 op	8	2825
Straight + 3% bran	66	175	63	2½	S1Sticky	10	9	4 spec	6 op	8	2850

CHART II—BRAN AND DIRT DUST

Sample	% Abs	Ferm Time (Min)	Proof Time (Min)	Mix Time (Min)	Dough Char	—Crust— Color	Char	—Crumb— Color	Grain	Texture	Volume (CC)
Straight grade	66	175	75	2½	N	9	9	10	10	10	2750
Straight grade	66	175	75	2½	N	9	9	10	10	10	2750
Straight grade +					S1						
.02% added ash*	66	175	72	2½	Sticky	10	8	8	8	8	2725
.02% added ash*	66	175	72	2½	Sticky	10	8	8	8	8	2800
Straight grade +											
.04% added ash	66	175	77	2½	Sticky	10	8	5	8	8	2700
.04% added ash	66	175	77	2½	Sticky	10	8	5	8	8	2675
Straight grade +					Slack &						
.06% added ash	66	175	76	2½	Sticky	10	7	3	5	5	2625
.06% added ash	66	175	76	2½	Sticky	10	7	3	5	5	2675

*Added ash content due to addition of bran dust and dirt.

TEST I — BRAN DUST

The first test (Chart I) was made with bran added to a medium protein straight grade bakers flour. The medium protein flour was selected so as not to color or emphasize the results obtained. Admittedly, a lower pro-

(Turn to ASH VS. BAKING, page 19a)

HOW DO YOU MEASURE QUALITY?

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Differing Response Of Soft Wheat Varieties To Air Classification

"Eastern wheat varieties appear to be slightly more responsive to fine grinding as there was a larger increase in the yield of the fine fraction after pin milling than was usual with the Pacific Northwest varieties."

By J. Brent Adair and H. G. Obermeyer
Applied Milling Research Department
General Mills, Inc.

DURING the course of some experiments involving air classification, we were intrigued by the large differences in the responses of certain soft wheat flours. In particular, soft wheat flours containing large percentages of Baart variety wheat consistently yielded fine fractions having a very high protein content. To investigate possible reasons for these differences, we decided to mill flour samples from several important wheat varieties and test their response to air classification. We selected pure variety samples from both the Ohio-Indiana soft wheat area and the Idaho-Washington-Oregon soft wheat area. The varieties used in these tests and their origins follow:

Vermillion	Greensburg, Ind.
Knox	Martinsville, Ind.
Butler	Croton, Ohio
Baart	Twin Falls, Idaho
Baart	Tacoma, Wash.
Lemhi	Twin Falls, Idaho
Lemhi	Ogden, Utah
Brevor	Tacoma, Wash.
Idaed	Tacoma, Wash.
Omar	Tacoma, Wash.

Baart and Lemhi varieties were duplicated to show up some of the effects of environment on a wheat variety's response to air classification.

The wheats were tempered to a constant 14.5% moisture level and then milled in a Buhler experimental mill set to yield approximately 60% extraction. A 50% short patent was produced by sifting the flour through a 13XX flour cloth. The patent flour was divided into two portions, one of which was impact milled at 14,000 r.p.m. in an Alpine Kolloplex pin mill. The 14,000 r.p.m. mill setting was used because it gives a good protein shake-loose effect without the stickiness which extremely fine grinding frequently gives soft wheat flours.

The pin milled and regular flours were classified in a laboratory-size Walther air classifier at a secondary air setting of 5 m^3/hr. This is a medium fine setting which is a compromise between extremely high protein in the fines and total removal of protein from the coarse fraction.

Table No. 1 gives the composition of the original flour and the classifier fractions from Baart and Lemhi wheat varieties. Each variety gave quite similar results regardless of its origin. There was a large difference in the response of the different varieties, however, as Baart yielded fines with a much higher protein content than Lemhi.

Table No. 2 gives the classifier yield and composition of the fractions from other Pacific Northwest wheat varieties. Here, also, there are large differences in the variety's response to air classification. Omar variety was very resistant to air classification and yielded only low protein fines. It is interesting to note the nearly two-fold difference in the protein content of the fines from Omar and Baart wheat varieties.

Table No. 3 gives classifier yield and fraction composition from three of the eastern soft wheat varieties tested. There are generally smaller differences in the response of these varieties than was observed with the one from the Pacific Northwest. The eastern wheat varieties appear to be slightly more responsive to fine grinding as there was a larger increase in the yield of the fine fraction after pin milling than was usual with the Pacific Northwest varieties.

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TABLE 1

Environmental Effects on a Wheat Variety's Response to Air Classification

	Yield	Ash*	Protein*	Fisher Particle Size
Baart (Twin Falls)	100%	.33%	10.3%	10.7
fine	7.6	.39	25.2	3.8
coarse	92.4	.32	9.0	12.0
Baart (Twin Falls) pin milled	100	.33	10.3	8.6
fine	10.0	.40	26.4	4.0
coarse	90.0	.32	8.3	10.8
Baart (Tacoma)	100	.32	9.6	10.9
fine	6.8	.39	26.6	4.0
coarse	93.2	.31	8.4	12.1
Baart (Tacoma) pin milled	100	.32	9.6	8.4
fine	10.0	.41	26.5	3.8
coarse	90.0	.31	7.8	10.9
Lemhi (Twin Falls)	100	.35	8.2	11.6
fine	8.0	.41	19.2	4.3
coarse	92.0	.35	7.3	12.0
Lemhi (Twin Falls) pin milled	100	.35	8.2	8.5
fine	10.0	.42	20.0	4.4
coarse	90.0	.34	6.7	11.2
Lemhi (Ogden)	100	.36	8.2	10.6
fine	8.4	.43	19.6	4.1
coarse	91.6	.35	7.2	11.9
Lemhi (Ogden) pin milled	100	.36	8.2	8.7
fine	11.0	.45	20.9	4.2
coarse	89.0	.35	6.6	10.4

* 14% moisture basis

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TABLE 2

Other Pacific Northwest Soft Wheat Varieties

	Yield	Ash*	Protein*	Fisher Particle Size
Brevor	100%	.32%	6.5%	10.4
fine	7	.40	22.6	4.4
coarse	93	.31	5.2	12.0
Brevor, pin milled	100	.32	6.5	8.7
fine	9	.42	23.8	4.2
coarse	91	.31	4.7	10.8
Idaed	100	.31	8.3	10.5
fine	7	.38	23.2	3.8
coarse	93	.30	7.2	12.1
Idaed, pin milled	100	.31	8.3	8.6
fine	9	.42	24.0	3.6
coarse	91	.29	6.7	10.0
Omar	100	.33	5.6	11.8
fine	8	.41	14.2	4.0
coarse	92	.32	4.9	13.0
Omar, pin milled	100	.33	5.6	8.6
fine	9	.40	15.7	4.6
coarse	91	.31	4.5	10.9

* 14% moisture basis

• • •

TABLE 3

Eastern Soft Wheat Varieties

	Yield	Ash*	Protein*	Fisher Particle Size
Vermillion	100%	.26%	7.6%	10.2
fine	8.5	.32	21.2	4.2
coarse	91.5	.25	6.3	10.9
Vermillion, pin milled	100	.26	7.6	8.0
fine	11	.40	21.5	4.0
coarse	89	.25	6.0	9.9
Knox	100	.28	7.4	10.5
fine	7	.34	21.5	4.0
coarse	93	.27	6.2	10.8
Knox, pin milled	100	.28	7.4	8.5
fine	10	.36	21.5	4.1
coarse	90	.26	5.8	10.8
Butler	100	.28	7.4	11.6
fine	6	.32	18.5	4.2
coarse	94	.27	6.7	13.1
Butler, pin milled	100	.28	7.4	9.2
fine	9.2	.34	18.4	4.2
coarse	90.8	.26	6.3	11.4

* 14% moisture basis

Responsibilities of Plant's Foremen Include Instructing Employees to Abide by Rules

By John E. Smith*
Director of Safety
Spencer Chemical Company
Pittsburg, Kansas

THE PURPOSE of all safety effort is, first and foremost, to prevent accidental injury or death to human beings. When a company hires a man, it accepts responsibility for his safety on the job. This obligation is in turn placed on the shoulders of the supervisor whose efforts to prevent his men from getting hurt should be as important as meeting production and quality standards.

In addition to human suffering, accidents cost money. The worker loses wages and the company loses production and has to pay compensation costs.

Thus safety pays off, too. The supervisor who enjoys an accident-free record usually has the confidence of his workers and gets good production and quality results. The reason for this is that people work best when they don't have to worry about getting hurt.

When a foreman or supervisor goes all out for safety, he enjoys the personal satisfaction of knowing that he is helping to prevent suffering and hardship. Workers sense his genuine interest in them and they will tend to cooperate to make a good safety record.

Work injuries are of two types:

1. Those which occur due to an unsafe condition, method or process. Examples are those which occur when gears are improperly guarded, passageways or stairs are poorly lighted, or housekeeping is sloppy.
2. Those which are the result of unsafe acts on the part of workers. Examples are accidents caused by horseplay, running in the department, cleaning a machine while it is running, or failure to wear the required protective equipment.

Accidents that arise out of unsafe conditions, methods or processes are the easiest for the foreman to correct. You can usually eliminate the causes by making simple mechanical improvements. Keep your eyes open as you go about your department and you will be able to spot these hazards before they cause trouble.

Accidents resulting from unsafe acts on the part of workers account for more than 80% of all industrial injuries. Preventing them is more difficult since there is no simple mechanical remedy. Eliminating these accidents depends upon the knowledge of the worker himself. The foreman should get to know the worker who is absent-minded, the worker who likes practical jokes and the worker who is always in a hurry or impulsive. They are the weak links in the safety chain. A little extra attention will go far toward eliminating their shortcomings. If possible, find out why they act as they do, and then do what you can to correct their unsafe habits or practices.

It is good to remember that a man who works safely usually works well. Here are some tips on how to get the job done safely:

1. Start a new worker off on the right foot. Know the safety angles of the job and train the new man to do the job safely.
2. Make safety training a part of regular job training.
3. Make it a habit to include safety in all job instructions. It is part of the job.
4. Proper habits have a lot to do with working safely. Aim to develop safe working habits. Then keep checking to make sure they stick.
5. When giving safety instructions, always explain why. "You see, Bill, if the pressure goes over that mark, a pipe may burst." "This square shaft end looks harmless, but you can get a mean bruise by touching it when it's turning, so let's be sure to keep that guard in place."

Don't take it for granted that a man knows why a job must be done in a certain way. Tell him, so that he will know what the dangers are.

Safety rules are the guide-posts to accident-free work. Here are some of the things a foreman should do:

1. Emphasize that safety rules are not made to make work harder; that their purpose is to prevent injuries.
2. Be sure the workers understand exactly what each rule means. Explain any technical terms, especially to a new man. Actually show the equipment, operation, or machine to which the rule refers.
3. Put yourself in the worker's place when explaining the reasons for safety rules. Think of all the things you would like to know, and be careful to explain the why of every safety rule.
4. Merely ordering people to observe safety rules, instead of explaining the how and why, may lead workers to try dangerous experiments when the foreman's back is turned.
5. When a worker is fully aware of the hazards, he will understand better why it is necessary to have safety rules.
6. Explain why the violation of a safety rule is considered just as serious as the violation of any other company policy or regulation: that it may injure other workers, cause a loss of time, or destroy company or personal property.
7. Workers appreciate your explanation because it shows that

*From paper presented before Midwest Regional Fertilizer Safety School, Chicago, Aug. 18, 1959.

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you respect them as intelligent human beings.

An infection that develops from the neglect of a minor injury is as much an accident as a finger caught in gears. The foreman must insist that all injuries, no matter how slight, be reported. Explain that this is to prevent possible infection.

Simply giving orders to report all injuries is not enough. Workers must be sold on the importance of first aid for all injuries. More than one arm has been lost through a neglected pinprick and subsequent infection.

Never permit a worker to shrug off a minor cut and return to his work without first aid. Show a sincere interest in the injured worker. The main thing is what happens to him.

Keep a close check on every injury until it is completely healed. Do not rely upon workers to keep you posted on the progress of an injury. Look for yourself, or check with the person administering first aid, and consider every minor injury as potentially serious and decide how to eliminate the cause.

Foremen or supervisors are responsible for preventing accidents. Workers, however, should be even more interested in safety because it is they

WORKING SAFELY...

who suffer when an injury occurs. Therefore, workers should be encouraged to take part in accident prevention work whenever possible. For example, they may have suggestions on how to improve safety rules. Or, they may want to paint lines to mark aisles, design a safety poster or clean up a hazardous condition in the department. There is nothing like having a part in preventing accidents to bring home the importance of safety.

Workers who help formulate safety rules are much more inclined to observe them than workers who do not. A new operation in the department provides a good chance to get the help of the workers in drawing up safety rules to cover it. Arrange regular meetings with workers to discuss safety problems. When such meetings are held, be sure safety is the only topic for discussion.

Formation of a safety committee is one very good way to get workers to participate. Be sure the duties of such a committee are clear. Rotate membership so that everyone has an opportunity to serve. However, unless special authorization is given, do not permit any worker to issue safety instructions or give orders pertaining to safety. This must remain the responsibility of the foremen or the supervisor.

Always give workers the satisfaction of an answer to their suggestions and recommendations. If a suggestion or recommendation is accepted, acknowledge it and tell the worker when it will be put into effect. When the suggestion is not practical, thank the worker for his thoughtfulness and explain why his idea cannot be carried out.

Workers find out quickly whether or not you have a real interest in safety, so do not expect them to have a better attitude toward safety than you have yourself.

Your actions have great influence upon the safety-mindedness of your workers. One violation of a safety rule by you may offset weeks of effort on your part to build-up respect for safety. Workers are far more willing to observe safety rules when they see that their foremen or supervisors also observe them.

Never permit an exception to a safety rule in order to get a special job done quickly. Workers may get the idea that they do not have to observe safety rules when it is inconvenient to do so.

Obviously, the supervisor must know the safety rules for his department thoroughly if he is to set a good example.

The goal of every safety-minded foreman or supervisor is to develop in his workers safe working habits that stick.

The key to a good safety record is to keep everlastingly after accident prevention. That means keeping the

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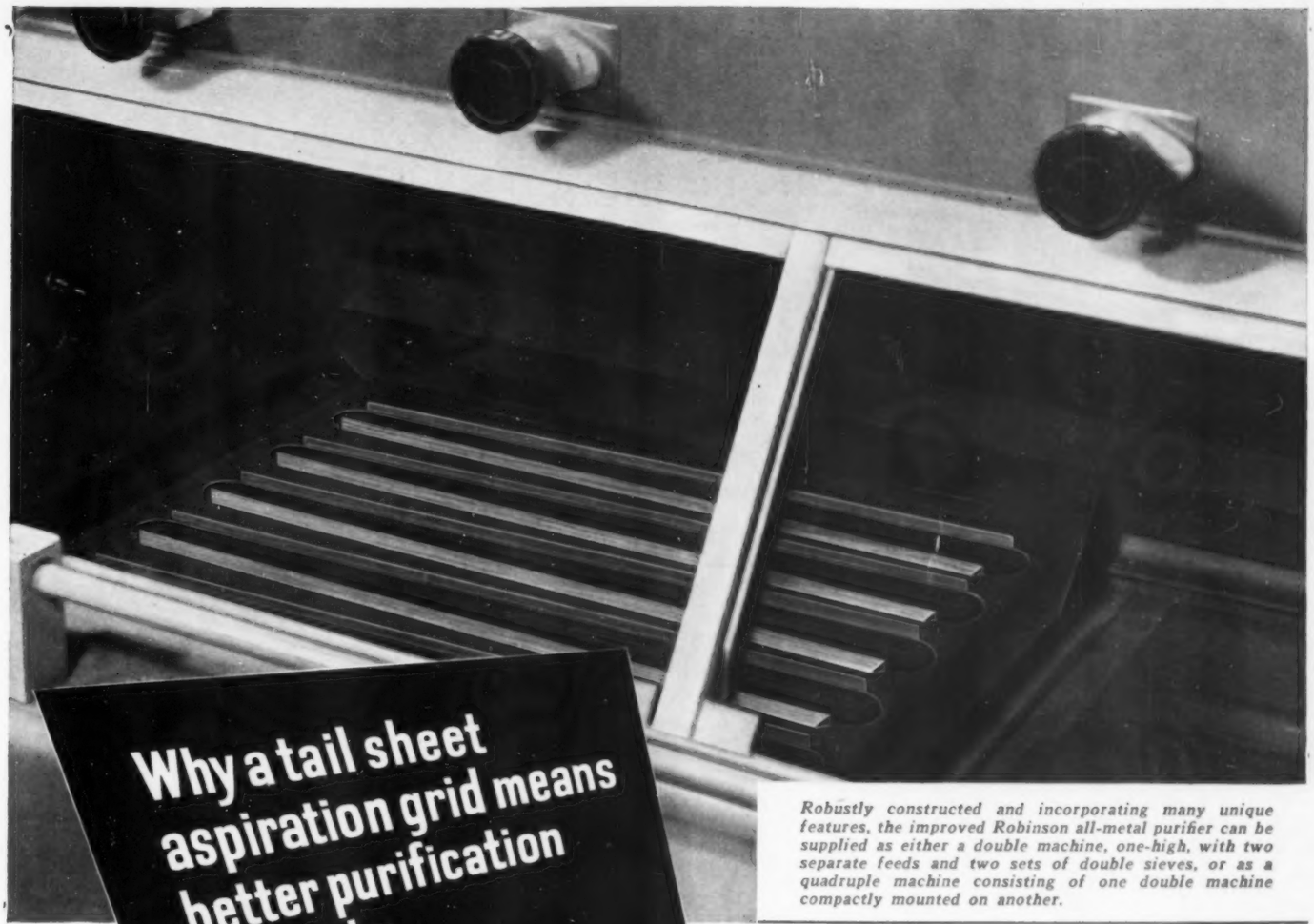

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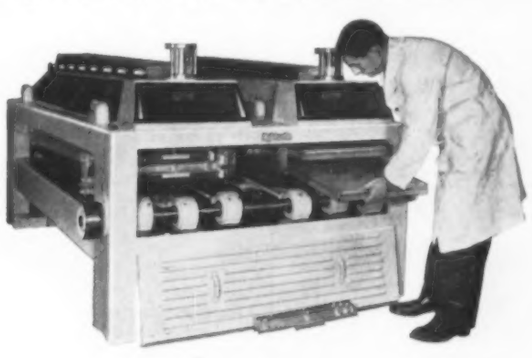

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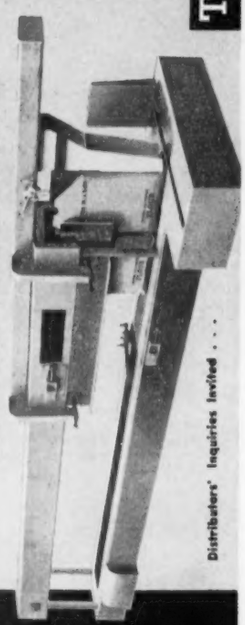
TAPE SAVINGS OVER 90%. GLUE COSTS LESS THAN 1/2% OF SEALING TAPE. EXAMPLE: AVERAGE SIZE BALES PUT OF 2,400 PER 8 HOUR DAY CAN . . . .
SAVE EACH DAY IN MATERIAL ALONE $18.00 OR ANNUAL SAVINGS OF $5,616.00

LABOR SAVING
100% OR MORE OVER HAND-SEALING METHODS. WHERE NORMAL 2 TO 4 MAN CREW IS USED, PACKAGING OPERATION IS CUT TO 1 MAN.
AVERAGE MINIMUM ANNUAL LABOR SAVINGS $5,200.00

MINIMUM SAVINGS (COMPUTED ON 2,400 BALES IN AN 8 HOUR DAY WEEK) AMOUNT TO $10,816.00 PER YEAR

Tol-O-Matic, Inc. 246 Tenth Avenue So. Minneapolis 15, Minn.

THIS IS THE Tol-O-Matic
AUTOMATIC BALE SEALER



Distributors' Inquiries Invited . . .

How To Save 100% OR MORE On Sealing BALER BAGS

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Also NEW ROLLS for Sale
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LET DOTY DO IT
If Your Lab Is Overloaded
Sanitation Analyses - Wheat and Flour
Doty Technical Laboratories
P. O. Box 7474
North Kansas City 16, Mo.

subject alive, without letting it become tiresome.

When a new worker has been taught how to work safely, check on his progress regularly to be certain that he does not develop unsafe habits. Ask him a question now and then. A why or how question will let you know whether he remembers the instructions he has been given.

Finding someone to blame when an accident happens does not remove the cause. After every accident take steps to prevent it from happening again. This may require further instruction, an improved guard on a machine, a thorough discussion with your safety committee, or a recommendation to top management for further action.

Check up regularly on the observance of safety rules. Infractions should be corrected promptly. If a safety rule is out of date, take such action as may be necessary to change it or eliminate it. Keep your rules to the smallest number necessary.

Keep a record of all accidents in your department. By reviewing it regularly, you will be alerted to those people who have the most accidents. It will also help you spot jobs or operations which may need more safety attention.

Make it a point to speak about safety to each one of your workers individually at regular intervals. Just a few words about safety will be enough. The constant reminders will help keep your workers thinking about safety.

—BREAD IS THE STAFF OF LIFE—

West Virginia Pulp Reports Sharp Rise In Earnings, Sales

NEW YORK—West Virginia Pulp & Paper Co. has reported record sales for the three months ended July 31 and third quarter earnings from operations 50% above the same period of last year.

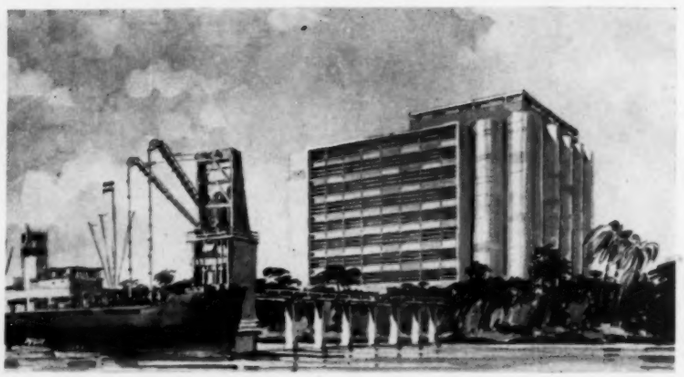
David L. Luke, president, said the company's third quarter earnings from operations amounted to $3,207,000, equal to 61¢ a share, compared with $2,137,000, or 39¢ a share, for the corresponding period in 1958.

For the first nine months of this year the company reported earnings from operations of $8,682,000, equal to $1.63 a share, compared with $6,820,000, or $1.26 a share, for the same period in 1958, an increase of 27%.

The third quarter results were achieved on sales of $58,956,000, the highest recorded in any previous quarter of the company's history. The quarter brought net sales for the first nine months of 1959 to $171,670,000, an increase of 14% over sales of $150,263,000 for the first nine months of the previous year.

In addition to earnings from operations, Mr. Luke reported a gain of $11,775,000, equal to an additional $2.29 a share, on the company's sale last June of its majority stock interest in the Hinde and Dauch Paper Co. of Canada, Ltd., to the St. Lawrence Corp., Ltd., of Montreal.

Mr. Luke attributed the company's improved third quarter performance to a strong demand for its paper and paperboard, converted paper products, chemicals and wood products, which enabled the mills to operate at more than 90% of capacity. He said all segments of the company's business were running well ahead of last year, reflecting continuing improvement in the general economy.



Here is an architect's drawing of the new flour mill for Molinos Dominicanos C. por A. at Ciudad Trujillo, Dominican Republic. It will be constructed by MIAG of Brunswick, Germany.

New Mill Planned for Dominican Republic

BRUNSWICK, GERMANY—A contract to build a flour mill for Molinos Dominicanos C. por A. at Ciudad Trujillo, Dominican Republic, has been awarded to MIAG of Brunswick, milling machinery firm.

The new mill, a design of MIAG's building department, will have a capacity of 3,500 cwt. basis 24 hours operation. A pneumatic ship unloading plant will have two systems, each with a capacity of 50 tons/hr. Grain will be conveyed over a 100 ft. long bridge to the elevator headhouse.

The elevator will have a capacity of 430,000 bu., a pre-cleaning and weighing system and a receiving system for grain from trucks. The cleaning house for the mill will have two lines for 200 bu./hr. capacity, each with a pneumatic cleaning-conveying system as well as washers, brushmachines and oscillating sieve separators.

Pneumatic conveying systems, automatic controlled roller mills, double deck purifiers and square sieve sifters will be installed in the mill. There will be bulk bin dischargers and a complete material handling system for flour and feed storage and packing as well as a control laboratory and a corrugating shop. Electric motors will be operated from central control panels.

The mill is scheduled to be completed and in operation in the spring of 1960.

Dust Protection
your workers
will welcome and wear
in even the HOTTEST weather

FLEX-A-FOAM
Dust Masks

• **Ideal for Hot Weather.** Filter's porous action absorbs and actually exhales body heat.

• Flex-A-Foam's lightweight (only 1 ounce complete) makes it cool and comfortable to wear—not hot and cumbersome like old-fashioned respirators.

• Flex-A-Foam is easier to breathe and talk through than an ordinary pocket handkerchief — does away with that stuffy, smothered feeling.

UNMATCHED ECONOMY

Flex-A-Foam is the lowest priced **quality** respirator on the market today.

Flex-A-Foam's washable filter outlasts throw-away type by more than 100 to 1.

Fewer filter replacements with Flex-A-Foam Dust Masks mean fewer lost production hours.

Your best *Ounce of Protection* against Irritating Dust

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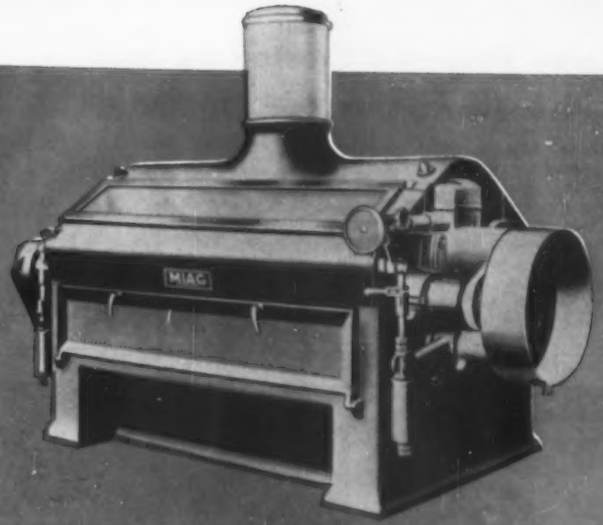
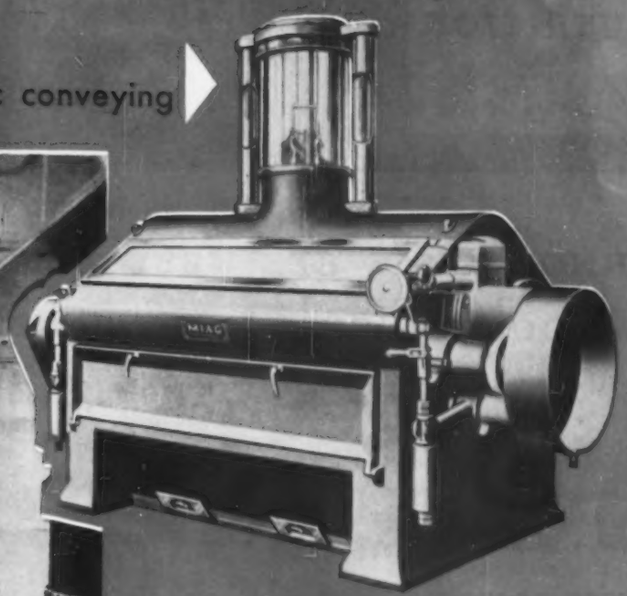
FLEXO PRODUCTS, INC. • Westlake, Ohio

Roller mills type HN with hydraulic on-off control system operated from feed inlet assure protection of roll surface and corrugation and more uniform mill operation

*



Special design HNP with built-in pick-up for pneumatic conveying



Roller floor of a 4500 mill with MIAG roller mills type HN

Design and construction of complete flour mill and grain storage plants including all mechanical and pneumatic handling systems for grain unloading, cleaning house, mill and warehouse

MIAG

BRAUNSCHWEIG (Western Germany)

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Industry Problems Created by Food Additives Laws Discussed in Florida

MIAMI BEACH, FLA. — The Food Additives Amendment of 1958 represents gratifying recognition by the government of the important role of additives in the country's food supply, but the chemical industry faces many serious problems under the new law, according to Kenneth E. Mulford.

Mr. Mulford is chairman of the food additives committee of the Manufacturing Chemists Assn., and assistant to the executive vice president of the Atlas Powder Co., Wilmington, Del. He spoke recently before the division of food, drug and cosmetic law of the American Bar Assn. in Miami Beach.

He said that the "complex problems facing us today call for a high degree of industrial statesmanship on the part of all of us who are involved in the operations of the new law."

He said that officials of the Food & Drug Administration "from Commissioner Larrick on down have extended excellent cooperation to industry" in exploring various problems that have arisen. Mr. Mulford said, however, that industry "must bear its full share of responsibility for seeking solutions."

Commenting on a statement by the Secretary of Health, Education and Welfare that has been interpreted as implying that manufacturers have been slow in filing petitions for approval of old additives under the law in expectation of an extension of the deadline filing, Mr. Mulford insisted that the "food industry and its suppliers are diligently endeavoring to complete and file petitions." The law, he pointed out, allows the secretary to extend the March, 1960, deadline for petitions on old additives that may require approval.

"If extensions beyond March, 1960, are requested," Mr. Mulford said, "it is my conviction that the secretary's decision should rest primarily on whether or not there is any real uncertainty about the safety of using existing additives during the time required to assemble data needed for petitions. Clearly this is the secretary's responsibility under the law, but if there is no real question regarding safety, he should take full account of the complex and time-consuming problems faced by industry."

Discussion Highlights

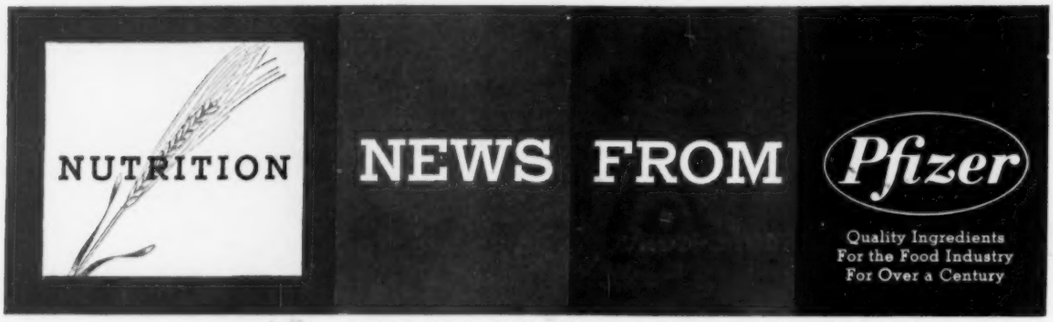
The following are the highlights of Mr. Mulford's discussion of some current problems and the position of the food additives committee of MCA:

"The new federal law may trigger the adoption of state and local legislation that could impose additional burdens on industry. The MCA committee believes that such legislation should conform with federal standards and practices without requiring additional, even though parallel, action to meet state and local requirements.

"The wording of the Delaney Amendment, dealing with carcinogens under the new law, has already created serious problems in the animal feed and veterinary fields, and raises many other problems with regard to its application in foods. The MCA committee feels that this provision requires further study to evaluate all of its implications.

"Difficulties have been encountered in the development of understandable common names for complex chemical compounds. The MCA committee endorses the principle of using simplified names for labeling, but does not favor establishing standards of identity because they might lead to governmental standardization of products.

"Data required by the Food & Drug Administration in clearance petitions under the new law is often most difficult to provide, even for ingredients generally recognized as safe."



TECHNOLOGISTS SEE NEED FOR FORTIFICATION OF FOODS SUCH AS BREAD AND PROCESSED CEREALS WITH VITAMIN B_6

While a "minimum daily requirement" has not yet been established for Vitamin B_6, the most recent data suggest the human need for this nutrient may be even greater than for thiamine and riboflavin. A composite of recent studies indicates that as much as 2-7 mg. of B_6 may be desirable in the daily diet.

Although Vitamin B_6 is widely distributed in foods, a large portion appears to be lost or destroyed during processing or cooking. One study contrasting the B_6 content of wheat fractions shows that while whole wheat flour contains approximately 2.09 mg./lb. of B_6, patent flour contains only 0.99 mg./lb.—a loss of 50% B_6 content through processing. Almost all white breads on the market today contain only 0.45 mg. of B_6 per one pound loaf. When you add to this the fact that meat in cooking has been found to lose as much as 57% of its B_6 content and that canning and processing of foods markedly reduces their natural B_6 content, you can see evidence of a marginal B_6 intake in the diet today.

There would appear to be good reason for food processors to consider fortifying their products with Vitamin B_6.

If you would like further information on this subject, write Pfizer for a copy of Technical Bulletin 96 and "*VITAMIN B_6—The Case for Dietary Enrichment.*"

* * *

New Facts About Lysine Supplemented Bread

The quality and efficiency of wheat protein can be markedly improved by supplementation with the essential amino acid, L-Lysine. (Pfizer produces L-Lysine by a unique fermentation process assuring highest quality.)

A recent nutritional report compared the protein quality and quantity of white bread, protein bread and egg. It shows that nine slices of ordinary white bread are required to equal one egg in terms of quality and quantity of protein. If white bread is supplemented with lysine, only five slices equal one egg.

The report shows that protein breads can be improved in a similar manner. If protein bread is supplemented with lysine, three and one half slices instead of five provide the same protein quantity and quality as one egg.

If you would like further information on lysine supplementation of bread and other products such as breakfast cereals, write to Pfizer for Technical Bulletin 89, "*L-Lysine Monohydrochloride.*"

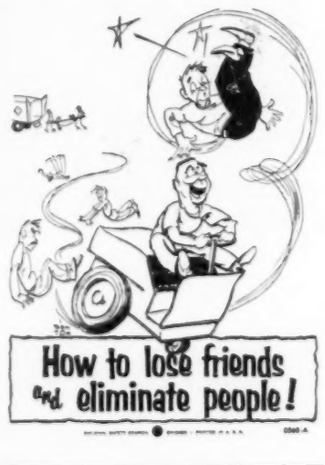
* * *

New BI-CAP® Enrichment Concentrate For Cornmeal

PFIZER BI-CAP® was one of the first enrichment concentrates. And this "head start" in vitamins has continued. It means that Pfizer can help you with the newest developments in enrichment products.

PFIZER BI-CAP has recently been improved through vitamin research. It is now a lighter colored enrichment mixture with an even riboflavin dispersion that overcomes unsightly agglomeration.

A new addition to the BI-CAP enrichment line is BI-CAP Bolted Cornmeal Enrichment. Pfizer also continues to offer its BI-CAP Degerminated Cornmeal Enrichment plus both single and double strength flour enrichment mixtures. If you would like further information write CHAS. PFIZER & CO., INC., Chemical Sales Division, 630 Flushing Avenue, Brooklyn 6, New York. Branch Offices: Chicago, Ill.; San Francisco, Calif.; Vernon, Calif.; Atlanta, Ga.; Dallas, Texas



Senate Committee Told Faster Write Off Of Equipment Essential for Small Firms

WASHINGTON—A more realistic depreciation schedule permitting faster write off of machinery and equipment is vital to the growth and stability of 4.5 million small firms which comprise the small business community. So said spokesmen for the National Small Business Men's Assn. in testimony before the Senate Select Committee on Small Business. They urged a formula which would take into consideration both inflated prices and the current value of the dollar.

"This need is magnified by inroads already made and growing in both American and world markets by countries which have adopted more realistic solutions to the depreciation problem," stated Frank M. Cruger, vice president of the National Small Business Men's Assn. and a partner in the Indiana Manufacturers Supply Co. of Indianapolis.

Supplementary testimony also was presented by L. M. Evans, board chairman of the association, who heads the Telectron Co. in Ft. Lauderdale, Fla.

Both emphasized three fundamental problems facing small business:

1. Replacement costs of machinery and equipment continue to increase greatly over original costs;
2. Competitive pressures, often from abroad, require continuing modernization of equipment;
3. Small firms lack sufficient capital with which to purchase necessary new equipment and machinery.

"Because our depreciation schedule is based on durability of machinery and equipment, rather than efficiency, the American businessman must take about 15 years to recover his investment," Mr. Cruger pointed out, "yet much machinery is obsolete in five years."

"But competitors in Sweden write off such costs in five years. Those in France and Italy can do so in seven. And both Britain and Swiss business firms need only eight years," Mr. Cruger said.

"This means that our overseas competitors can replace their equipment and machinery two or three times as often as can American small businessmen," he stated, "and through such increased efficiency and modern facilities, they continue to take more business from us—even here in the U.S."

Criticism Voiced

Both witnesses were highly critical of "the injustice to small firms caused by present tax laws" which require, as an example, that machinery or equipment purchased in 1946 be charged off with 1946 dollars. Yet their replacement must be made with 1959 dollars, which have greatly diminished purchasing power because of inflation.

So a firm, while realizing some savings through the new machinery, will not be able to recover sufficient capital with which to purchase replacement, they emphasized. Consequently, they must rely on hard-to-get borrowed capital at high interest rates or attempt to accumulate reserves from profits steadily diminishing because of high state and federal taxes and inflation.

"Moreover, the present unrealistic depreciation schedule contributes to the continuing spiral of both wages and prices," said Mr. Cruger, "for the actual depreciation of equipment and machinery is understated."

"This understatement suggests a greater profit than actually realized," he continued, "yet major decisions such as demands for higher wages are based on it. Normally, wage hikes then are passed on to the consumer through higher prices—and inflation grows."

Action Needed

In summarizing, both witnesses agreed that survival, growth and stability of small business is largely dependent upon immediate action by Congress which would allow businessmen to recapture their machinery and equipment investment in much less time than at present. A faster tax write off would stimulate the economy and generate more jobs, for the small firm's competitive position would be improved through greater modernization and increased efficiency.

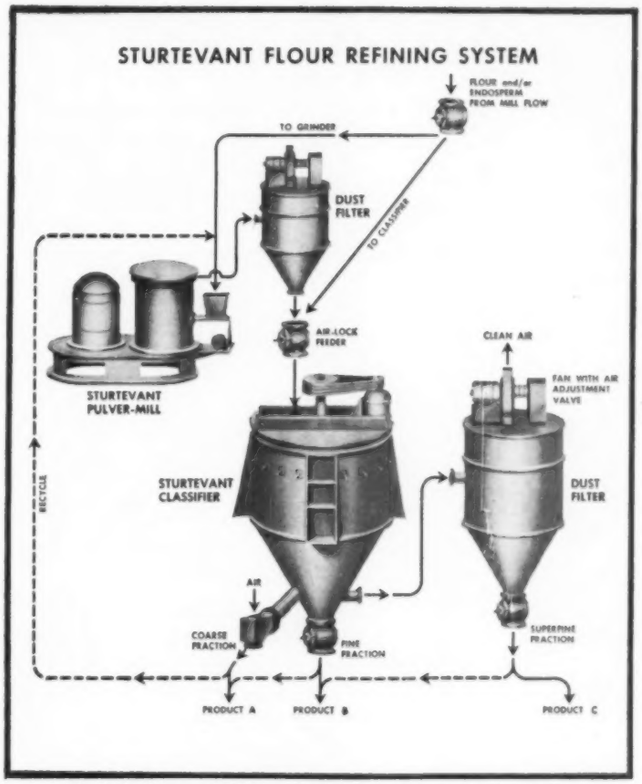
"And more accurate reporting of business profits through realistic depreciation schedules would be one of the greatest factors contributing to control of inflation," Mr. Cruger concluded.

Robinson Receives Order for New Mill

MANILA — Republic Flour Mills, Inc., the first flour mill to be established in the Philippines, has made plans for expansion. Thomas Robinson & Son, Ltd., Rochdale, milling engineers, has received an order valued at $750,000. It calls for the setting up of a further mill to increase the output of flour from 17,250 lb. an hour to over 31,000 lb. an hour.

Robinson built the first Republic mill.

New Sturtevant Flour Refining System is Highly Flexible, Makes Precise Separations



Key to the Sturtevant Refining System shown above is a Sturtevant Air Classifier which can produce 3 kinds of flour in one operation. Both the Pulver-Mill and the Air Classifier have exceptionally large capacities.

For protein shifts... Primary classifications.. Coarse or fine separations for new end products

Sturtevant's new flour refining system is the result of 44 years of experience engineering classification systems for food and other industries.

Heart of the special system is a Sturtevant Air Classifier which classifies coarse, fine and superfine fractions. Low volume of air requirements means smaller dust filters. Thus savings in both space and costs are effected.

The Classifier makes precise selections of end products by means of exact control of air currents and centrifugal force. Simple adjustments in counter action between these two forces permit the receipt of almost any desired particle size.

Operation of Sturtevant's new flour refining system is highly flexible. The Pulver-Mill and Air Classifier can be used singly or together, in accordance with individual grinding-classifying needs.

CALL ON STURTEVANT to help you upgrade your milling system while lowering production costs. Sturtevant Flour Refining Systems offer much higher output capacities than are available elsewhere, yet require only 1/3 as much capital investment.

Write today describing your requirements. A Sturtevant engineer will be happy to make recommendations based on 44 years' successful experience with grinding-classifying problems. Address your letter to *Grain Processing Division, Sturtevant Mill Company, First National Bank Bldg., Fostoria, Ohio.*

CRUSHERS
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STURTEVANT MILL COMPANY
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Specialists Find Shrinkage Losses, Grade Changes in Stored Wheat Small

WASHINGTON — Marketing specialists measured the weight and value of some two and a half million bushels of Kansas wheat recently to discover what losses of weight and quality, if any, occur during approximately two years of storage. The answer, they found, was very little.

According to the Agricultural Marketing Service of the U.S. Department of Agriculture, the total value of wheat delivered to 53 government bin sites in 1952, 1953, and 1954 was $5,010,493. Total loss of weight and quality for this wheat amounted to $31,561 during the storage period. Some $28,019 of this loss was due to shrinkage; $3,542 resulted from grade changes and the removal of screenings.

These figures are based on an assumed value of $2 bu. for No. 1 wheat and Commodity Credit Corp. discount rates for the different grades. Sales of screenings were given actual sales value.

Net Loss

On a per bushel basis, the average net loss for the wheat was 1.25¢ with 1.11¢ of this caused by shrinkage. The remaining 0.14¢ loss was accounted for by grade change and screenage. The removal of screenings actually caused a loss of 0.33¢, but this was offset by a gain of 0.19¢ bu. due to changes in the average in and out grades.

To get the total change in value for the wheat during storage, the researchers subtracted the value of wheat shipped from the value of the wheat received, then added or subtracted the value of screenings sold.

The specialists found that the grain at five of the bin sites had increased in total value during the storage period. The grade of this grain as it moved out of storage was higher than when it went in, and this increase in value was enough to offset the losses due to the removal of screenings and shrinkage.

If shrinkage losses are not considered, 17 other bin sites would also have shown net gains. That is, the loss due to screenings at these sites was more than offset by the grade changes.

Screenings Sold Later

Screenings, which are originally paid for at the same rate as the grain (unless dockage is included), were later removed and sold separately. Their per bushel value as screenings equalled about 77¢, considerably below that the grain itself.

The marketing specialists chose 10 of the bin sites for intensive analysis. One-half of these sites were in the eastern part of the state and one-half in the western. Most of the storages were round steel bins with a capacity of about 3,250 bu.

It was found that none of the factors usually attributed to shrinkage and grade changes—the type and capacity of the bins, insect infestation, moisture from external sources, fumigation, the use of insecticides, and turning operations—seriously affected the net value or the gross shrinkage losses of this wheat.

—BREAD IS THE STAFF OF LIFE—

INSIDE SCIENCE **LATEST REVISION**

The Vital Story of MILLED WHITE RICE

Enriched with Vitamins and Iron for Better Health

by Science Writer

A second "Battle of Bataan" in the Philippines has proven beyond all doubt the value of vitamin enrichment to consumers of white rice.

The famous Bataan experiment in 1948-1950 proved conclusively that whole populations can benefit from enrichment of white rice with vitamins and iron, that disease and death caused by dietary deficiencies can be overcome, that enrichment is a key to better health among infants, children and adults.

What Happened at the Second "Battle of Bataan"

Before the start of the Bataan trial, these facts were evident:

- Polished white rice is the principal food of millions throughout the world. Good food though it is, it lacks several of the key nutrients occurring in the brown rice from which it is milled, and beriberi is often common where white rice is the main food.
- In the Philippines, beriberi was common and mortality from it high.
- Beriberi is caused by insufficient vitamin B_1 in the diet. It yields when vitamin B_1 is given to its victims. It does not occur when human beings receive enough of this vitamin in their diet.
- To prevent beriberi where white rice is the main food, vitamin B_1 must be added to the diet, either by itself or in food such as rice.
- For centuries it has been universal practice to rinse rice before cooking, hence vitamin B_1 (and any other water-soluble nutrient factor) should be added in such a way that it will not dissolve out.
- Through a process developed in the laboratories of Hoffmann-La Roche, it is possible to enrich white rice with water-soluble vitamins and iron so they will not wash off during this rinsing prior to cooking.

With these facts known, the second "Battle of Bataan" began. Through the cooperation of Philippine public agencies, the Williams-Waterman Fund, the USPHS, and Hoffmann-La Roche a controlled experiment was set up in the province of Bataan. More than 12,000 medical examinations were made, before the enrichment of rice began. Nearly 13% of those examined had beriberi.

Enriched white rice was then put into commerce in the experimental area, but not in the control area.

What happened? *Within two years beriberi was practically wiped out in the experimental zone!* . . . beriberi mortality dropped almost to zero . . . almost 90% who had symptoms of the disease before enrichment's start were free from signs of the disease or were greatly improved . . . thousands of people were helped to better health. News of the success of enrichment reached people in the control area and caused them to demand that their rice be enriched, too.

Other Countries Follow Suit

Word of the excellent results of the Bataan experiment fanned out throughout the world. The largest rice miller in Thailand marketed enriched white rice with success in 1951. In that year, also, the Puerto Rican government enacted legislation requiring that all white rice sold there be enriched, beginning early in 1952. Since then, enriched rice has been made available to the public in Cuba, Venezuela, Colombia, The Dominican Republic, Taiwan (Formosa), Singapore, and Australia.

South Carolina First To Adopt Enrichment

South Carolina, a state having high per-capita white rice consumption, requires by law that all white rice sold there be enriched with vitamin B_1, niacin, and iron, with vitamin B_2 to be included at a later date. This state has required enrichment of white flour and corn meal since 1942 and 1943 respectively.

Federal Standards of Identity Now In Force

The U. S. Food & Drug Administration established the following Standards of Identity for enriched rice which must contain at least 85% of the minimum quantities, shown below, after a rinsing test. If the method of enrichment does not permit this rinsing requirement to be met, consumer size packages must bear the statement: "Do not rinse before, or drain after, cooking."

Vitamin	Milligrams per pound Min.	Max.
Thiamine	2.0	4.0
Riboflavin*	1.2	2.4
Niacin	16.0	32.0
Iron	13.0	26.0

*Optional pending further study

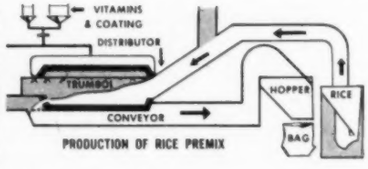
U. S. Federal Specification N-R 351 C requires the same content as the minimum standards shown above.

Popular brands of 'quick cooking' rice are now being enriched with all of the required vitamins.

How Is White Rice Enriched?

The enriching method in widest use throughout the world employs a method developed in the laboratories of Hoffmann-La Roche Inc., pioneers in the research and production of vitamins.

The Roche method impregnates rice grains with thiamine, niacin, (riboflavin, if desired), and iron and adds a final, outer coating of edible material to protect the vitamins against deterioration and preliminary washing and rinsing. For economy large amounts of vitamins are applied to small amounts of rice to make a "premix". One pound of the "premix" is then mixed with a larger quantity (usually 199 lbs.) of ordinary milled white rice at the mill.



PRODUCTION OF RICE PREMIX

What of the Future?

The trend to nutritionally-improved foods for better health is definite. The United States, a world-leader in the enrichment of white flour, white bread, corn meal and grits, farina, pastina, macaroni products, and breakfast cereals is now recognizing the need to enrich milled white rice. *When good foods are made better, everyone benefits.*

This article is part of series on the enrichment of processed cereal grain foods which are enriched for better nutrition. It is published by the Vitamin Division, Hoffmann-La Roche Inc., Nutley 10, New Jersey. An illustrated brochure containing the text of all articles in the series is available at your request without charge.

Pfizer Names Two Branch Managers

NEW YORK — Branch managers have been appointed at the Chamblee (Atlanta), Ga., and Dallas, Texas, distribution centers of Chas. Pfizer & Co., Inc., pharmaceutical and chemical company.

F. Charles Goerke, formerly branch manager at Dallas, has been named to the same post at Chamblee. He is succeeded at Dallas by Richard G. Stocker who transfers from the company's San Francisco distribution center, where he was office manager.

Pfizer pharmaceutical, chemical and agricultural products are distributed in a 10-state area from the Chamblee center. The Dallas center serves Pfizer customers in the southwestern part of the country.

Mr. Goerke joined Pfizer in 1951 as an order clerk in Pfizer laboratories, one of the company's sales divisions for ethical pharmaceutical products. Subsequently named assistant to the sales manager, he was appointed office manager of Pfizer Laboratories in 1954 and branch manager at Dallas the following year. He attended Guilford College, Greensboro, N.C., and New York University.

Mr. Stocker joined the Pfizer San Franciso distribution center in 1953 as an administrative assistant and was promoted to office manager in 1957. He attended Sacramento Junior College and received a B.S. degree in business administration from the University of California in 1951.

SUPERIOR CARBIDE TOOLS
For All Roll Corrugating
Economical Increased Output
CORRALLOY TOOL CO.
Minneapolis 7, Minn.

Industry and University People Agree On Change in Kansas Feed Tech Group

MANHATTAN, KANSAS—Representatives of the formula feed industry and Kansas State University have agreed on a new organizational structure for the Kansas State feed technology advisory committee.

It was announced that the feed technology policy advisory committee will be dissolved and appropriate members of the university staff designated to serve on the feed technology inter-departmental relations committee. This new committee will deal with internal problems exclusively and thus will not duplicate work of the newly constituted feed technology advisory committee.

The following members of the Kansas State staff will serve with industry representatives on the feed technology advisory committee: Head, department of flour and feed milling industries; director, agricultural experiment station; director, school of agriculture; director, extension service, and dean of agriculture.

Six industry representatives on the feed technology advisory committee will be selected as follows:

—Two ex-officio members: President, American Feed Manufacturers Assn., and executive vice president, Midwest Feed Manufacturers Assn.

—Two industry members named by AFMA.

—One industry member named by MFMA.

—One industry member named by the Grain Processing Machinery Manufacturers Assn.

Appointed industry representatives on the committee will serve three-year terms.

Maurice Johnson, Staley Milling Co., division of Spencer Kellogg & Sons, and John Heimovics, Shanzer Manufacturing Co., currently serving on the Kansas State feed technology policy advisory committee, are to be appointed for three-year terms as industry members of the reconstituted feed technology advisory committee.

The chairman (an industry member) and the secretary (a Kansas State staff member) are to be elected by the committee.

Subcommittee chairmen representing scholarships, promotion, research and other fields deemed appropriate will be selected by the committee from industry members.

Display Planned of Canadian Agriculture

MONTREAL — A cross-section of Canadian agriculture is displayed pictorially in a Canada Department of Agriculture exhibit at the Ninth International Botanical Congress.

Research is the theme of the event. A giant map of Canada serves as a backdrop for the 36-ft. exhibit, and the location of each of the department's research stations and experimental farms is pin-pointed.

Pictures showing the type of crops grown near each of the research centers in the coast-to-coast chain are displayed on pylons, giving the exhibit a walk-in effect.

More than 4,000 scientists are attending the congress, making it the largest scientific gathering ever held in Canada.

Specialists in many fields of botany will present findings and hear the research results from colleagues from other parts of the world.

International congresses are held every five years. About 2,000 botanists from 72 countries are taking part in an extensive series of field trips to all parts of Canada, including the sub-Arctic.

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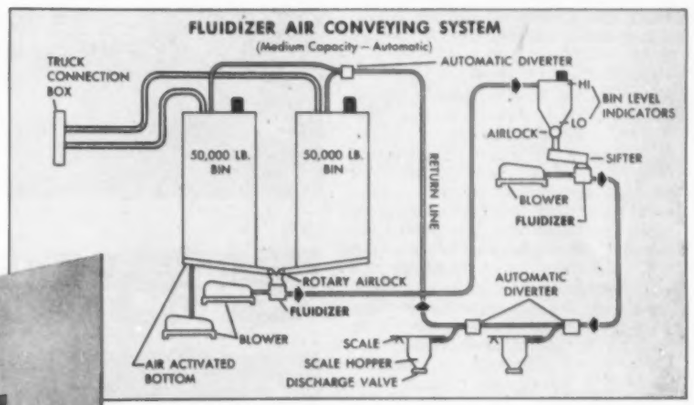

"IN 2 YEARS – MOST BAKERS WILL BUY BULK FLOUR"

"The cost efficiencies and higher sanitation inherent in automatic air conveying of bulk flour and sugar have led to rapid conversion of major U. S. bakeries to complete air handling systems," according to William P. Edmunds, General Manager of The Fluidizer Company, a major designer and producer of air systems machinery.

"Most bakeries will be fully converted in two years," according to Edmunds, "since present unconverted bakeries' financial balance sheets are now reflecting the problem of the high cost of hand labor and a need for more efficient use of existing facilities. The price ceiling on the retail market for flour products is causing bakery executives to search for new sources of profit through production efficiencies."

The solution for many industry leaders has been bulk flour purchasing and in-plant air conveying systems.

Benefits gained by conversion include cash savings of 13¢ per CWT on the bag and about 11¢ per CWT on automatic handling, shrinkage and sanitation. Based on flour input of 1000 CWT per week, cash savings amount to about $12,500 per year. Savings in bulk starch and sugar are even higher.

Edmunds indicated that smaller bakeries can install basic air handling systems that can be fully converted at a later date.

The Fluidizer Finance Plan is designed to enable any bakery to convert to bulk flour *immediately* with a minimum capital investment. The financial data set forth below is based on the illustrated system, it is just one of the many Fluidizer system designs available in all price ranges. Costs of systems depend on utilization of your present facilities and capacity requirements. Call for free engineering estimate.

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Less 20% down payment	6,000.00
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Bulk savings	$0.24 per CWT
Total savings per month	$ 1,040.00
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Cost of System	**(per month) $ 900.00**
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Japanese Officials Study U.S. Storage Methods, Procedures

MANHATTAN, KANSAS—Nine Japanese officials have been studying the grain business in Kansas during the past two weeks and spent Aug. 31 and Sept. 1 inspecting grain storage equipment and structures in Kansas City.

The visitors arrived in Washington July 29 and will spend two months in all observing and studying U.S. conditions and methods with a view to improving their own grain storage and handling procedures. The Japanese have studied the production, storage, warehousing and processing of grain in Texas and they took a look at grain handling facilities in New Orleans. Two days were spent in Hutchinson touring an elevator and a flour mill.

At K-State

At Kansas State University, the visitors received information on drying and conditioning grain in storage on the farm, on the processing of feeds for livestock and poultry, and on fumigation methods. They wound up their visit at Manhattan Aug. 28 with a demonstration in preventing damage to stored grain put on by the U.S. Department of Agriculture's stored products insect laboratory.

Before the Japanese leave this country the last of September they will visit educational institutions, USDA agencies, and grower groups in Illinois, Washington, Oregon, and California.

The Japanese participating in the two month tour of the U.S. include Manae Fujisawa, president of the Food Storage Warehouse Assn., Urawa City; Yoshiaki Kamei, managing director of the National Federation of Food Enterprise Cooperatives, Tokyo; Tsugue Kobayashi, chief of the food division of Showa Sangyo Co., Ltd., Tokyo; Hiroshi Mashita, director of the National Federation of Miscellaneous Cereals Wholesale Marketing Cooperatives, Yono City; Shozo Morohashi, with the grain division of Michimen Co., Ltd., Tokyo; Shiro Tawada, managing director of Sanwa Institute of Electric Science Co., Ltd., Kanazawa; Hideo Teramura, chief of the potato and starch division of the National Federation of Marketing Agricultural Corp., Tokyo; Tsutomu Tsugawa, standing director of the Japan Grain Inspection Assn., Tokyo; and Tomei Yamane, managing director of the Tokyo Grain Commodity Exchange.

—BREAD IS THE STAFF OF LIFE—

New Grain Elevator Planned in Mississippi

PASCAGOULA, MISS.—Gov. J. P. Coleman and the executive committee of the Mississippi Agriculture and Industry Board have approved the issuance of the first $1 million in bonds for the Pascagoula harbor improvement program. A total of $6 million in bonds will be issued to cover the first phase of Pascagoula's $10 million port expansion program.

First to be constructed will be a grain elevator estimated to cost between $3 and $4 million which will be leased to Standard Milling Co. of Kansas City under terms of a five-year agreement entered into with the county.

Officials of the Pascagoula Port Authority, the Ewin Engineering Corp., Standard Milling Co. and elevator contractors met recently to work out final arrangements for construction of the elevator.

Victor Announces Plans To Expand Phosphorus Plant in Tennessee

CHICAGO—Victor Chemical Works has announced plans for the immediate expansion of its phosphorus furnace plant at Mt. Pleasant, Tenn. Construction is to start at once, according to Rothe Weigel, president.

The first section of the project will consist of a large rotary kiln for nodulizing phosphate rock in preparation of feed for the electric furnaces, coolers to reduce the temperature of the hot clinkers, conveyors for handling the raw phosphate rock to the kiln and the finished nodules to storage silos, and scrubbing towers for purifying the gases leaving the kiln.

The second part of the project will consist of a large electric furnace for smelting the phosphate rock and recovering the elemental phosphorus. This will be the fifth furnace at the Mt. Pleasant plant. The phosphorus from the new plant will be converted at other Victor plants into a large number of phosphorus chemicals used in foods, organic phosphorus chemicals, feed supplements for livestock, medicinals, plastics, metal treatment and household and industrial cleansers. Much of the output of the new facilities will go to Victor's new Waterway plant, a phosphorus chemicals plant now under construction at 138th St. in Chicago on the Great Lakes to the Gulf waterway.

Victor, during recent years, has substantially increased its holdings of phosphate rock reserves in middle Tennessee, and operates its own rock washing plant, two miles northeast of Mt. Pleasant.

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Elevator Operation Costs Emphasized at Canada Tariff Meeting

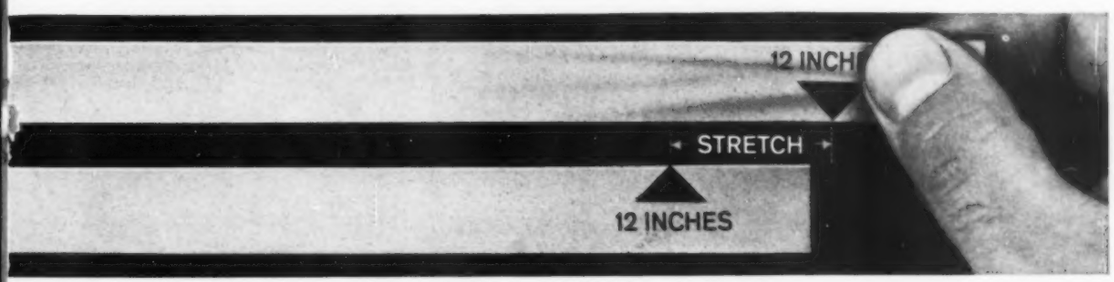
WINNIPEG—In submissions to the tariff hearing of the Board of Grain Commissioners in Winnipeg Aug. 25, all country and terminal elevator companies emphasized the steadily increasing cost of operating country and terminal elevators. All briefs stressed that costs continue to rise.

Member companies of the Northwest Line Elevators Assn. requested an increase of ¼¢ bu. in elevation charges at country elevators, and a continuation of all other charges and allowances on the present basis. At terminal elevators at Ft. William and Port Arthur, the association asked for an increase in elevation, storage and cleaning charges. In addition, the member companies asked for an increase in the allowance for invisible loss and shrinkage regarding flax and rye.

United Grain Growers, Ltd., and the three wheat pools said they would make no application for any increases in the 1959-60 crop year, and were prepared to operate under the same maximum rates as were in effect during the 1958-59 crop year. They argued, however, that if the present rate of increase in operating costs continues, increased tariffs and handling charges are inevitable.

The Interprovincial Farm Union Council, exclusively a farm-member body, in its brief argued there should be no increases.

The Board of Grain Commissioners will make its decision known sometime in September.



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'Changes, Challenges' Called the Theme of GFDNA's 1959 Meeting

MINNEAPOLIS — "Changes and Challenges" might well be the theme of the 1959 Grain & Feed Dealers National Assn. meeting in Minneapolis, officials said in outlining plans for the event.

More than 50 national directors and some 200 trade leaders will be on hand to participate in the meeting Sept. 13-14.

A more recent association release said topics to be discussed also will include the Commodity Credit Corp. and Commodity Stabilization Service cost study of commercial grain warehouses to obtain data for use in the re-negotiations of the Uniform Grain Storage Agreement, the Senate Committee on Agriculture and Forestry investigation of the CCC-CSS management policies and practices and various bills in Congress of direct interest to the grain and feed trades.

The national committee on uniform grades and the national trade rules committee will hold meetings to discuss current problems and plan future programs of activities.

Madison Clement, association president, will announce the appointment of an education and public relations committee, which will hold its first meeting in Minneapolis.

——BREAD IS THE STAFF OF LIFE——

Association Secretaries To Meet Sept. 12-13

WASHINGTON—A special session on insurance programs for associations will be presented by a panel of three veteran secretaries Sept. 12-13 at the annual meeting of the Grain & Feed Dealers National Assn. in Minneapolis.

Secretaries from 55 grain and feed asociations, representing some 15,000 grain and feed firms in the U.S. and Canada, will meet in conjunction with the GFDNA annual meeting.

Secretaries to participate in the panel are: Clif Anderson, Farmers Elevator Association of South Dakota, chairman; Fred Sale, Indiana Grain & Feed Dealers Assn., Inc., and Howard Elm, Nebraska Grain & Feed Dealers Assn.

Other guest speakers will include: Madison Clement, president, GFDNA; George Wilkens, executive vice president, Minneapolis Grain Exchange; W. E. Glennon, president, American Feed Manufacturers Assn.; E. H. Sather, president, Central Retail Feed Assn., New Richmond, Wis., and Alvin E. Oliver, executive vice president, GFDNA.

Robert Skinner, secretary, Western Grain & Feed Dealers Association of Iowa, and Herb Sharp, secretary-treasurer, GFDNA, will discuss new ideas on association management.

Also, special equipment will be demonstrated showing how to quickly test protein content of wheat and a new method of testing moisture in grain samples.

——BREAD IS THE STAFF OF LIFE——

To Sales Position

NEW YORK—H. D. Wellington has been appointed to the newly created position of assistant general sales manager of Gilman Paper Co. and its subsidiaries, St. Marys Kraft Corp., and Kraft Bag Corp. Mr. Wellington formerly was western sales manager, located in Gilman Paper's Chicago office.

Flaxseed Storage Facilities Surveyed

WASHINGTON—County elevators may relieve their limited storage capacity by cleaning flaxseed, and by delivering elevator-owned grain to terminal markets as quickly as possible, according to a report from the U.S. Department of Agriculture.

Lack of flaxseed storage space is a common problem of country grain elevators in Minnesota, North Dakota and South Dakota. USDA's Agricultural Marketing Service surveyed storage facilities, operations and practices in 265 elevators in the three-state area where about 95% of the U.S. flaxseed crop is grown.

Managers considered 83% of their elevator capacity to be suitable for flaxseed storage, and 61% of the total capacity was used for flaxseed at some time during the year.

Wooden storage structures make up 68% of the total elevator capacity, and account for 73% of the space suitable for storing flaxseed. The remaining storage space was largely of concrete or steel. Before 1930, wooden structures accounted for more than 90% of capacity. The total capacity of elevators surveyed nearly doubled between 1945 and 1955.

The present method of grading flaxseed may discriminate against producers delivering high quality seed for which no premiums are allowed. A more equitable method of testing flaxseed would be on the basis of the oil content of the seed, the USDA report states.

A single copy of "Flaxseed Storage at Country Elevators in Minnesota, North Dakota, and South Dakota," Marketing Research Report No. 350, can be obtained from the Office of Information, U.S. Department of Agriculture, Washington 25, D.C.

Sterling Drug Reports Record Sales, Profits

NEW YORK—Net profit and sales of Sterling Drug, Inc., New York, parent company of Sterwin Chemicals, Inc., for the six months ended June 30 were the highest for any first half in the company's history, according to James Hill, Jr., chairman of the board. The previous June 30 high was recorded in 1958.

Net profit for the first six months of 1959 was $9,508,962, an increase of 15.3% over the $8,249,587 for the corresponding period a year ago. Current half year's earnings are equivalent to $1.20 per share of common stock, compared with $1.04.

Sales for the first half of 1959 were $102,839,941, up 5.3% from the $97,628,357 for the corresponding period of 1958. In view of the elimination from the company's consolidated financial statements of the accounts of its units operating in South America, all figures for 1958 have been restated to put them on a comparable basis with those for 1959.

For the three months ended June 30, net earnings were $4,205,315, or 53¢ per common share, an increase of 27% from the $3,311,969, or 42¢ per share, in the 1958 second quarter. Sales for the second quarter were $49,685,029, compared with $46,176,607 for the quarter ended June 30, 1958.

Directors of Sterling have declared a regular quarterly dividend of 40¢ per share on the common stock, payable Sept. 1 to stockholders of record Aug. 18.

The directors' action puts the regular dividend on a yearly basis of $1.60, the highest in the company's history. The regular quarterly dividend for the past two years has been 35¢ per share, with a year-end extra of 10¢ per share.

—BREAD IS THE STAFF OF LIFE—

Simon Moves Into South Africa

MANCHESTER, ENGLAND—A joint company to be known as Simon-Macforman (Pty.), Ltd., has been formed and will take over the business of grain milling engineers carried on by Macdonald, Forman & Co., Ltd., of Alberton, Transvaal and Cape Town, South Africa. This is the result of a decision of Henry Simon, Ltd., milling machinery firm of Manchester, to take a substantial financial interest in the sale and manufacturing of milling machinery in South Africa. It reportedly is the intention of the company to increase production of grain milling, mechanical handling, baking and food processing machinery and accessories there.

ISSUE WARNING AGAINST HIGH MOISTURE WHEAT

WINNIPEG—The Canadian Wheat Board has issued a warning to producers about harvesting grain which is not in a dry condition. There is not sufficient elevator space in country and terminal elevators to permit the handling of tough and damp grain in volume. The board, therefore, advises that if producers thresh grain with too high moisture content, they must be prepared to store such grain on their farms until it can be delivered under the initial quota, and under general quotas as established from time to time.

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Peavey Establishes Research Facilities, Appoints Director

Richard B. Zoller

MINNEAPOLIS—Establishment of an economic research department and the appointment of Richard B. Zoller as its director was announced by F. Peavey Heffelfinger, president of F. H. Peavey & Co.

"The primary objective of this department," said Mr. Heffelfinger, "will be to analyze and report on alternative courses of action open to management for allocation of the company's resources. The particular areas of responsibilities will be in the fields of production and marketing economics."

Dr. Zoller, who received his Ph. D. in agricultural economics from the University of Minnesota in 1958, has been on the firm's executive staff for the past year. While working for his advanced degree, he served as a research assistant in the university's department of agricultural economics, and also as an instructor.

Prior to completing his graduate studies under Dr. George Pond, Dr. Zoller authored several research articles. He is a member of the American Farm Economics Assn. and the American Economics Assn.

——BREAD IS THE STAFF OF LIFE——

Manager Appointed For Weber Baking

LOS ANGELES—The appointment of Jack Higgins as sales manager of Weber Baking Co., San Diego, was announced by John R. Dow, president of Interstate Bakeries Corp.

Mr. Higgins has been with Interstate Bakeries for 12 years and served as a driver-salesman for seven years and as a sales and depot supervisor for the past five years.

Durum Acreage Drop In Alberta Reported

LETHBRIDGE, ALTA. — Commenting on the Dominion Bureau of Statistics preliminary estimates of acreage showing the area planted to durum wheat at an estimated 1,018,400 acres, or 9% below last year, Catelli Durum Institute notes that Alberta farmers are rapidly going out of durum varieties.

Saskatchewan farmers, on the other hand, are holding the line on durum through the necessity of having an alternate crop to bread wheat. Manitoba farmers are cutting down slightly on durum acreage.

The institute forecasts that western Canada will harvest 15,275,000 bu. of durum wheat this year, from an average yield of 14.1 bu. acre. This was the same average yield as a year ago. With very dry conditions early in 1959, a great deal of durum has headed early and has short stems and short heads, the institute points out. The hot dry weather has not helped kernels to fill. "However, it is never wise to sell the wheat crop short on the Canadian prairies due to weather alone, because it is a most hardy and adaptable plant," it is noted in the institute report.

Commenting further, the report says: "Since 30 million bushels of durum are now in store in Canadian elevators, and since a further 15 million bushels may be left on Canadian farms, the 1959 crop, if it materializes, will be more than adequate. Canadian sales of durum at home and abroad during the 1958-59 crop year will only total approximately 20 million bushels. Good harvesting weather in August will be the key to future sales of Canadian durum, and farmers' hopes are pinned to this short, but important period of time.

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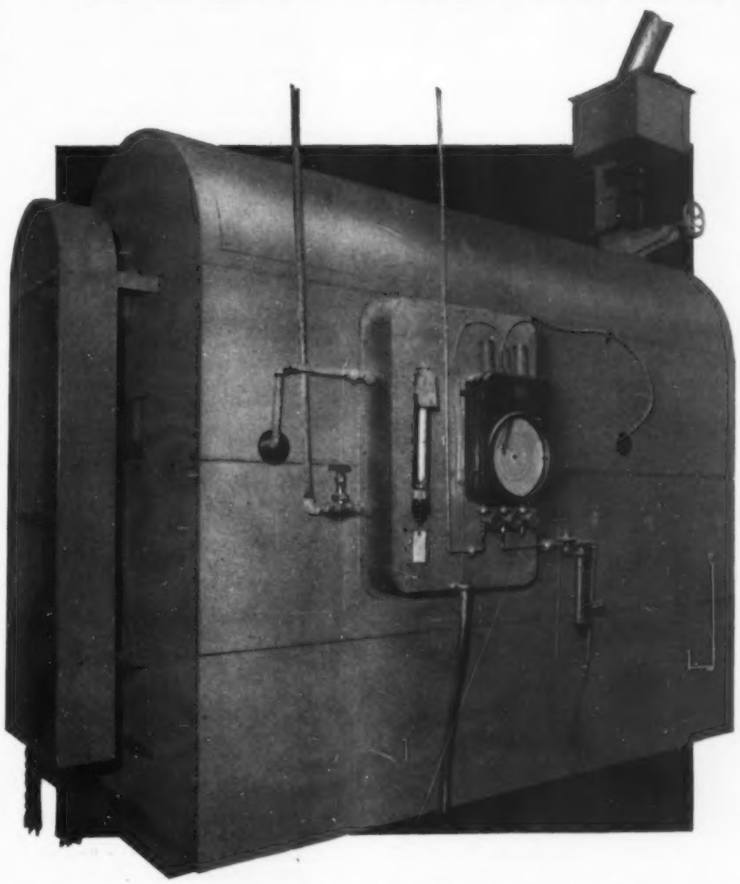

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U.S. Quality Foods Will Be Exhibited At International Fair

WASHINGTON — "Quality Foods from Farms of America" will be the theme of an exhibit at the international general provisions and fine foods exhibition in Cologne, West Germany, Sept. 26-Oct. 4, the U.S. Department of Agriculture has announced.

The exhibit, sponsored by USDA and cooperating U.S. agricultural trade associations, will enable European tradespeople and consumers to become better acquainted with the quality and ready availability of U.S. agricultural products, the announcement said. It will be presented as part of USDA's continuing program to expand foreign markets for U.S. farm products.

Commodities to be displayed will be wheat and wheat products, soybeans and soybean products, frozen packaged foods, fruits and fruit products, and rice and honey. Samples of doughnuts, fruit juice and toasted soybeans will be given away, and samples of cooked poultry will be sold.

DAY

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BULLETIN 574—12 pages, describes horizontal and vertical storage tanks. Points out savings and is filled with photos of various installations plus description of auxiliary equipment.

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CREDIT AUTHORIZED FOR MEXICAN CONSTRUCTION

WASHINGTON—A credit of $3.7 million to assist in financing the dollar costs of a grain-storage warehouse construction program in Mexico has been announced by Samuel C. Waugh, president of the Export-Import Bank of Washington. The credit was authorized to Nacional Financiera S. A., for the benefit of Almacenes Nacionales de Deposito S. A., usually called ANDSA. It will be used by the Mexican company to purchase equipment, materials and services required not only for the construction of grain storage warehouses, but also for the cleaning, drying and storage of grain. Shifts in production from cotton to other crops, especially corn and wheat, have caused the need for greater storage space. The credit is guaranteed by the United Mexican States.

Rap-In-Wax Opens New Branches After Buying Georgia Firm

MINNEAPOLIS—Rap-In-Wax Paper Co. has opened three regional sales offices, according to an announcement by A. E. Sloan, general sales manager.

The new offices are located in Chicago, Kansas City and Minneapolis. Heading up the Chicago operation is D. E. Armstrong, recently director of customer services for Rap-In-Wax and its subsidiary, the United States Packing Corp., Paterson, N.J. Regional manager for Kansas City will be R. E. Bailey, a longtime Rap-In-Wax salesman. The Minneapolis regional office will be run by A. H. Loux, formerly assistant manager of Rap-In-Wax's commercial packaging division.

"Our rapid sales expansion, plus the recent acquisition of Cotswold Fibres, Inc., of Columbus, Ga., necessitated expanding our sales services in order to adequately service our growing list of customers," said Mr. Sloan. The new offices are the first step in setting up a nationwide network of regional sales offices.

Cotswold Fibres, a plastic film and fiber producer, was purchased as the second step in a three-step plan to give Rap-In-Wax a broad line of flexible packaging products and major production facilities in each part of the country.

According to John J. Ahern, Jr., president, and P. M. Grieve, executive vice president, the first step was the purchase last year of United States Packaging.

—BREAD IS THE STAFF OF LIFE—

Mutual Millers, Dealers Set for Convention

JAMESTOWN, N.Y. — The Mutual Millers & Feed Dealers Assn., Jamestown, will hold its convention Sept. 15-16.

A golf tournament is scheduled Sept. 15 at the Moon Brook Country Club.

The program Sept. 16 includes a business meeting and election of three directors; a talk on "Changing Scene in American Agriculture" by C. M. Kessler, eastern regional sales manager of Allied Mills, and an afternoon outing at the Moose Club grounds on Lake Chautauqua.

Grain Firm Opens Receiving Stations

BURLEY, IDAHO — Kerr Grain Corp., one of the Mini-Cassia area's newest industries, has announced the opening of four grain receiving stations in Minidoka County.

Six pneumatic grain-conveyors brought in from Portland will facilitate the receipt and unloading of the grains, a spokesman said. This equipment will subsequently be used to pick up farm-stored grain after the harvest. Prompt unloading is promised at all receiving stations. Ground at the beet dumps will be covered with polyethylene, so that grain can be dumped in a matter of minutes.

Kerr has completed construction of district offices in downtown Paul, and is working toward completion of 380,000 bu. capacity grain warehouse at the same site. With the unit west of Paul, the firm has a storage capacity of 540,000 bu. grain.

Kerr has operated through dealers in this area previously and will continue to do so, but will offer to direct market for farmers. Its home office is in Portland.

—BREAD IS THE STAFF OF LIFE—

IRAQ WHEAT IMPORTS

Iraq has issued import licenses for the importation of an additional 50,000 metric tons of wheat, of which 30,000 tons are to come from USSR and 20,000 tons from Australia. This follows an earlier import of 50,000 tons in the same proportions from those countries. Trade sources believe the authorization reflects a desire to hedge against refusal of farmers to market their crop in anticipation of higher prices later, and farmers' reluctance to market their wheat until the shares of land owners and tenants are defined.

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7029

ASH vs. BAKING

(Continued from page 1a)

tein would have given much more dramatic results.

Pure bran was collected and ground in a Buhler mill. It was not possible to reduce the particle size so as to pass all or even a large percentage of the bran through a flour cloth, so the material remained in flake size. Using the untreated straight grade as a standard, samples were then prepared and baked, in duplicate, and compared to the standard. Bran particles were added as straight grade plus one percent, straight grade plus two percent, and straight grade plus three percent.

It is recognized that these percentages of additive bran are higher than could possibly occur through poor milling practices. The wide spread was used because of the large particle size obtained, and to make certain that if volume was to be affected by adding bran, the point at which the break in volume occurred would be within the range selected.

In mixing and handling the dough, the formulas became increasingly more sticky and hard to handle as the percentage of bran increased.

All flours were given the same fermentation treatment and then baked. Very little difference in volume resulted as noted in the grading tabulation. Color was very noticeably affected. Because of the particle size used, a speckled appearance was given the crumb. The crust held up well throughout, although crumb and texture started to deteriorate with one percent bran or more.

TEST II—BRAN AND DIRT DUST

Because the bran particle size was larger than the flour size in the first test bake, the test was repeated with bran and dirt dust collected from the prebreak or first break system (Chart II). This material was of fine enough particle size to pass through a flour cloth, and, of course, was material which occurred in the milling process. The levels of dust used were such as to add 0.02%, 0.04%, and 0.06% ash, respectively, to the flour.

Using the medium protein strength untreated straight grade flour as a standard, the samples were baked, in duplicate, and compared with the standard flour. In the mixing and handling of the dough, the most noticeable aspect of the flours was that they became progressively more sticky as the percentage of dust was increased. The highest level of ash dust treatment was very sticky and somewhat difficult to handle.

All flours were given the same fermentation schedule. On proofing the loaves it was noted that the higher the dust treatment, the greater was

Frank R. Ofner

the tearing noted on the unbaked loaves before being placed in the oven. All loaves were graded after cooling, and the effect of the dust was to decrease the loaf volume progressively, although the effect of the first 0.02% additional ash was not as great as the difference between 0.02% and 0.04%, or 0.04% and 0.06%. The 0.02% loaf was just slightly less in volume than the untreated straight grade, a greater difference occurred on 0.04%, and a very definite drop at the 0.06% ash addition.

The crumb color was very definitely affected, with a progressively darker color as the percentage of dust was increased. The grain showed the same trend as loaf volume, with a slight decrease on the 0.02% ash additive, and a very definite coarseness and drop at the 0.04% and 0.06% ash additive levels.

SUMMARY

To summarize the above and considering only the effect of ash on the baking qualities, dust and dirt in flour streams seem to affect primarily the grain of the finished bread, secondly the loaf volume, and thirdly the color of the crumb. These then are the baking qualities referred to.

As a measure of bran and dirt the deteriorating effects of increased ash even in small amounts appear to be sufficient to cause concern to the baker and the miller.

The millers' problem is to keep bran and dirt particles from being added to the stream. This can best be accomplished by a gentle, thorough cleaning action and proper conditioning. A wheat washer, when correctly used with the recommended ratio of gallons of water to the bushel of wheat washed, is extremely important. With an American washer the miller should never use less than four gallons, and preferably six gallons of water per bushel washed. The washer flushes away the powdered bran and dirt present in the wheat and eliminates the shattering into flour particle size the "tits" which add the bran powder in the prebreak or first break.

The baker should consider rewriting his specifications in regards to ash to make the requirements more realistic. If a simple method of determining inherent ash of the endosperm of the various types of wheat were available, to this should be added an allowable tolerance for the miller which would be directly proportional to the amount of bran and dirt dust present. Baking qualities should then be better controlled. This is the ultimate goal of baker, miller and equipment manufacturer.

—BREAD IS THE STAFF OF LIFE—

CO-OP CHARTER GRANTED

OKLAHOMA CITY, OKLA.—The Farmers Cooperative Assn. at Gore, Okla., has been granted a charter. Capital stock is $1 million. Incorporators are C. E. Sloan of Gore, and Dick Sheffield and Clem Chapman.

DAY

DUST CONTROL NEWS

Free! 9 informative dust control equipment bulletins

You can save time when planning and save money when buying if you'll send for these DAY dust control bulletins. Each contains valuable information about dust control equipment and systems. Here's general information plus useful technical data and specifications. Ask for any bulletin which interests you or write for them all—they're free. Use this magazine's reader service card or write direct toDAY.

BULLETIN G-579 — Describes the DAY Type "R" filter. An all purpose, versatile unit. Bulletin gives operating features, dimensions and specifications.

BULLETIN 573 — Dual-Clone dust separators — noted for their low resistance and high cleaning efficiency. Easy to install, no maintenance, no moving parts.

BULLETIN 576 — "HV" heavy duty dust separator. Rugged construction and lower initial cost than many light gauge galvanized type cyclones.

BULLETIN F-75 — Reverse Jet Dust Filter Facts. Complete with specifications, typical equipment layouts, capacity and performance tables for DAY type "AC" filter.

BULLETIN N-578 — Gives complete information about Style "A" rotary valves. Construction features, specifications, dimensions and applications.

"SCHLITZ DEFEATS DUST" — FOOD ENGINEERING magazine reprint describes all out dust control for 3½ million bushel Schlitz grain elevator. Request Bulletin "Schlitz Defeats Dust."

"EFFICIENT DUST SNATCHERS" — Bulletin describes DAY's part in providing maximum safety and good housekeeping for starch packing building of large food processor.

BULLETIN 510 — DAY Unit Dust Collectors. Complete, low cost unit designed for plants or applications where central dust control systems are not practical.

BULLETIN I-585 — Industrial Fans. Complete with helpful selection charts, capacity tables, dimensions and specifications. Information on special types and arrangements included.

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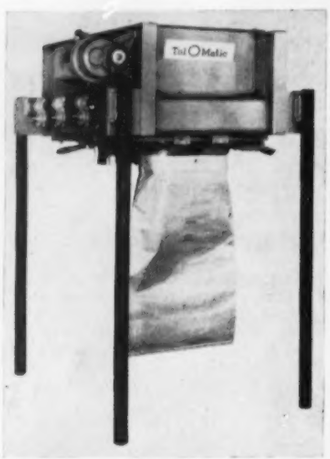
This reader service department announces the development of new and improved products, new services and new literature offered by manufacturers and suppliers. Claims made in this department are those of the firm concerned. Use the accompanying coupon to obtain the desired information.

No. 2145—Baler Loads Automatically

Tol-O-Matic, Inc., has introduced its new Series 50-100 Tol-O-Matic Baler, which automatically loads sacks of flour or similar products into paper baler bags or burlap shipping sacks. A model is being installed at the Pillsbury Co.'s plant at Astoria, Ore. The machine is adjustable for different sizes of bags or bales, and the manufacturer claims it increases production and reduces packaging costs through elimination of bag damage. The machine is operated by one man without lifting. Additional savings are claimed because the machine shapes the filled bag so that it slides firmly into the shipping bag, allowing easier handling, palletizing and storage, and reducing the required length of the shipping bag. For more information check No. 2145 on the coupon, clip and mail to this publication.

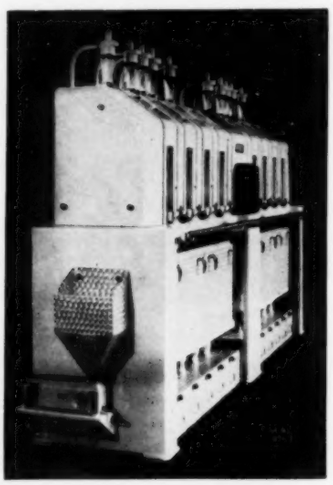


No. 2146—Literature On Impact Mill

The Entoleter division of Safety Industries, Inc., has announced publication of the first literature on its new Contro Mil, a contra-rotating centrifugal impact mill. The Contro Mil double-rotor action, combined with the use of lower rotational speeds to achieve higher impact velocities, substantially reduces operating and maintenance costs, it is claimed. In the literature are facts and figures on wear resistance, motor, rotor and installation specifications, and information on applications for grain, food mixes, and basic chemicals, minerals and ceramics. For details check No. 2146 on the coupon, clip and mail to this publication.

No. 2143—New Experimental Mill

MIAG of Brunswick, Germany, has developed a new experimental flour mill called the "Multomat." The unit consists of eight individual pairs of rolls 10 in. in diameter and 4 in. wide. Each pair of rolls can be individually adjusted and has separate gears for the roll differential. Normally, three pairs of rolls are used for breaks and five pairs for reductions, but other combinations are possible. The unit has 10 sifter sections, eight for the rolls and one each as middlings grader and duster. The stocks are handled with a pneumatic conveying system with 12 lifts, one of them for wheat feeding from an intake hopper. The unit is fully automatic. The hourly capacity ranges between 120 and 200 lb. and samples can be as small as 10 lb. The power consumption is approximately 9 to 10 h.p. and the unit contains motors and the necessary motor controls. Among others, Multomat units have been furnished by MIAG to the Wheat Industry Control Board Pretoria, South Africa, and to the Station de Recherches de l'Etat (Government Research Station), Gembloux, Belgium. One unit is now being manufactured for use in the U.S. Clip the coupon, check No. 2143, and mail to this publication for details.



No. 2140—Sealer For Concrete Floors

A new chemical product for sealing concrete floors might end the old grain storage problem of laying polyethylene or tar paper sheets between the bin floor and the grain. This new liquid sealer, called "Dri-Flor," has just been introduced by the Knott Chemical Co. Already in use at several large storage operations, it has effectively locked out all moisture which might otherwise come up from the ground through the concrete floor and damage the grain, the manufacturer claims. Because it is chemically inert, Dri-Flor is not affected by acids, alkalis, grease or oils. This means that one application lasts for several years. Initial cost is less than 3¢ sq. ft. Clip the coupon, check No. 2140, and mail for details.

No. 2139—Pulver-Mill Literature Available

Literature on the new "Pulver-Mill," specifically aimed at the milling industry, now is available from Sturtevant Mill Co.'s new grain processing division. The literature con-

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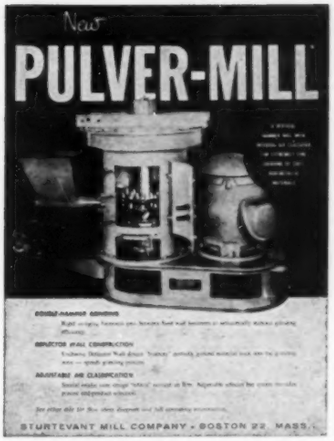


tains a flowsheet and gives operating information on the new unit, which is designed for the pulverization of soft materials, particularly grains. The mill has three exclusive Sturtevant features: double impactor grinding, deflector wall construction to "bounce" partially ground material back into the grinding zone while speeding grinding, and adjustable air classification providing for precise end-product selection. All three features were engineered by Sturtevant and are considered "firsts" in the field, with patents pending. For details check No. 2139 on the coupon, clip and mail to this publication.

No. 2141—Wheat Cleaner Available

C. W. Brabender Instruments, Inc., is offering an innovation in self-contained laboratory wheat cleaners, the "Labo-Fix." Designated Model WC-1, the cleaner features, among other things, a 1,000 gram capacity grain hopper, stepless air regulation for pneumatic sample pre-cleaning, large slotted sieve for coarse dockage and interchangeable, two-part slotted sieves for shrunken kernels. The cleaner will process 500 grams in six minutes and, also, is convertible to a dockage tester. For details check No. 2141 on the coupon, clip and mail to this publication.

No. 2142—Bulletin On Pneumatic System

The availability of a case history story describing the pneumatic conveying system at Chef Boy-Ar-Dee has been announced by Sprout, Waldron & Co., Inc. Bulletin I-54 describes the Sprout-Waldron automatic unloading, transferring and conveying system designed for complete flexibility. Photographs of the portable unloader, mechanical unloaders, storage tanks, blower-motor assemblies, heat exchangers, control panels and other important units in the system are included, along with a detailed step by step operations story. Copies are available on request. Simply check No. 2142 on the coupon, clip and mail.

No. 7319—Stacking Belt

A high speed stacking belt, designed for use with standard Power-Curve box car and truck loaders has been announced by Power-Curve Conveyor Co. The company claims the unit can make possible one-man, push-button car loading of bags. The operator guides the bags as the conveyor stacks to full height anywhere in the car. The unit handles 30 bags per minute. The stacker and conveyor are push button controlled from the

same station, advance or retreat under shuttle power without interruption of flow, the company says. The loader carries bags through box car door and into the end of the car or around pillars, corners, through aisles and doorways. For details, check No. 7319 and mail.

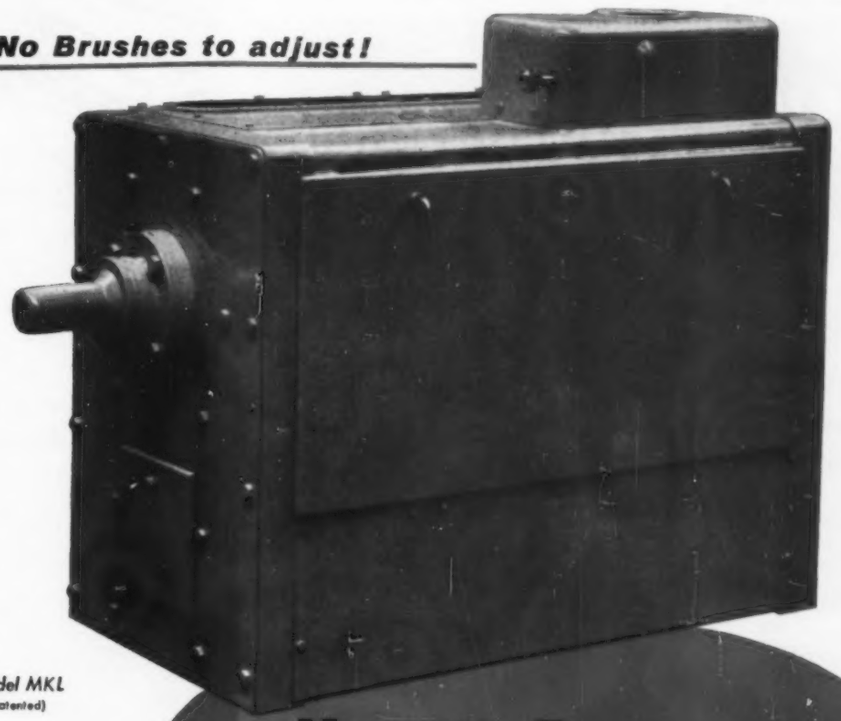
No. 7326—Dust Collector Book

A 24-page, illustrated handbook, entitled "Industry Relies on Dustube Collectors for Efficient Dust and Fume Control" is being offered by Wheelabrator Corp. The book describes a wide range of industrial dust and fume producing processes. The operating principles of Dustube Collectors are illustrated and explained. There are also 14 separate illustrated sections showing how the collectors are used. For copies of this booklet, check No. 7326 and mail.

No. 7369—Semi-Bulk Handling System

The Powell Pressed Steel Co. announced they have acquired a semi-bulk handling system from Delta Tank Manufacturing Co. The system is for handling storage and shipment of chemicals, grains and other dry

No Brushes to adjust!



Model MKL
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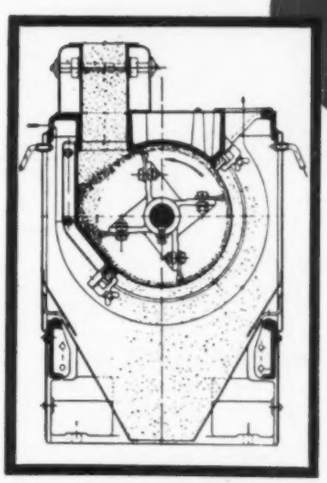
How to Remove all the Flour From Your Bran



- Cleans thoroughly, uniformly without reducing bran.
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Special centrifugal process. A high-speed rotor moves the stock through the machine with a spiral action. To prevent stock from acquiring the same speed as the rotor, which would almost eliminate the impact action, it is continually thrown against a baffle plate. The loosened flour particles pass through a steel screen.

Easy adjustment. A unique inlet regulation controls the length of time the product is exposed to impact action by shortening or lengthening the effective path of the bran through the machine. Changes can be made quickly while machine is running.

Quality product. Bran is large and clean after leaving the machine and the flours are very fine and light in color. Since there is no actual rubbing action, power requirements are low.

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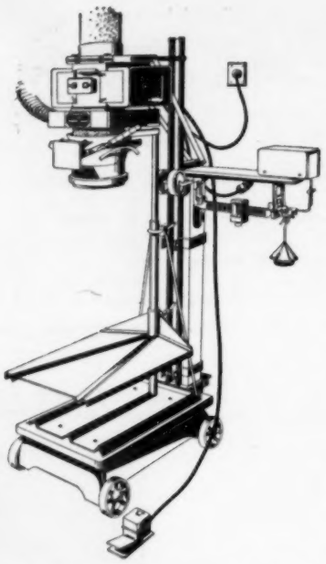
granular products. To be marketed under the name "Invert-A-Bin Semi-Bulk Systems," the system will enable manufacturers to handle all "loose" materials either intra-plant or inter-plant, company literature said. For details check No. 7369 on the coupon and mail.

No. 7377—Pneumatic Conveyor Data

The availability of an advance specification sheet (No. 205) which describes a recently developed portable pneumatic conveyor, has been announced by Sprout, Waldron & Co., Inc. Photographs of the completed unit and an engineering drawing giving dimensions and major design details are included. Information on how the unit works is also included. For details check No. 7377 on the coupon and mail to this publication.

No. 7368—Bagging, Weighing Machine

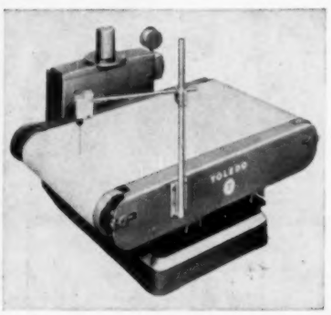
Finco, Inc., announces the "Way-Matic Bagger" is now available for general distribution. The machine is suitable for weighing and bagging



seed, feed, fertilizer, grain, chemicals and clay products, the company says. The unit handles cloth, paper or multiwall bags from five to 100 lb. or more and is able to fill and weigh six to 10 bags a minute, company literature said. The company guarantees accuracy to within 2 oz. a bushel. Check No. 7368 on the coupon and mail for details.

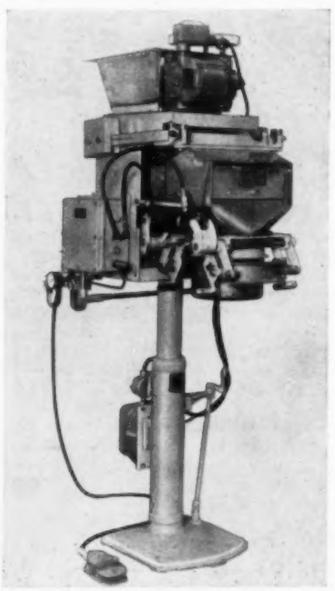
No. 7447—Automatic Checkweigher

An automatic, high capacity checkweigher, designed to check weights of items from 50 to 200 lb., has been announced by Toledo Scale, division of Toledo Scale Corp. The unit will handle packages at speeds up to 40 items a minute, the company says, with an accuracy of approximately one part in 3,000. Model 9460 is equipped with a belt-type motorized conveyor on the weigh section. The unit continuously checkweighs bags, cartons, boxes, packages, blocks, cans or tubes without stopping the item on the scale, the company said, and the unit can be adjusted to change from one package weight to another. It can be furnished with remote zone indication stations and a pilot light unit can show the weight zone into which each item falls. Check No. 7447 and mail for details.



No. 7383—Bag Packer

A bag packer designed to improve packing speed of low density products has been announced by Bemis Bro. Bag Co. Called the Bemis "Jumbo Packer-Ette," the unit has improved features including an enlarged supply hopper and feeder tray, stainless steel product contact surfaces and optional agitator, the company says. The unit is designed for medium-sized packing operations and is a gross weigher (scale and bag-



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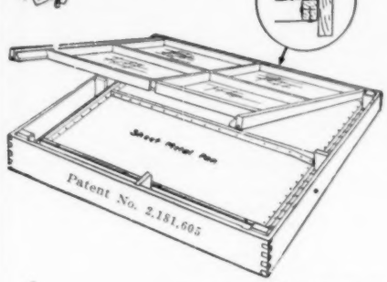

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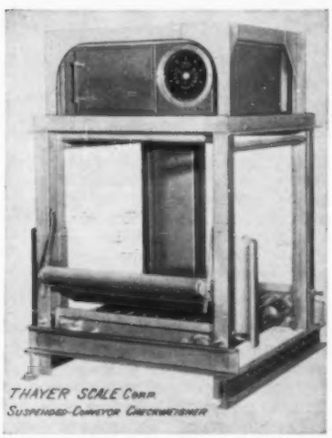
holder combined). The Packer-Ette fills and weighs up to eight 100-lb. bags a minute at an accuracy within 2½ oz., the company says. It is adjustable for bag sizes from 25 to 150 lb. For more details about this product, check No. 7383 on the coupon and mail.

No. 7446—Suspended-Conveyor Weigher

Thayer Scale Corp. announces a new model (CDAU) checkweigher with a conveyor suspended under the flexure plate scale. The unit, which is accurate to plus or minus 1/10th lb. of preset weight, was designed for installations where spillage conditions would interfere with the operation of a scale placed under the conveyor, the company said. The model is also usable where low floor clearance is necessary. The scale is available in sizes from 18 in. to 36 in. with ranges up to 200 lb. and speeds up to 20 units a minute. It checkweighs, indicates and registers package weights automatically. For more information check No. 7446 on the coupon and mail.



No. 7448—Bin Design Booklet

A revised edition of the 16-page booklet "Fundamentals of Bin Design," has been announced by Sprout, Waldron & Co., Inc. The booklet explains the meaning of piped-in-feeds, and the features of the system. Also described is a suggested bin design for poultry and dairy feeds, giving details for construction and installation of the bins and the piping. Included are size and capacities for typical bins as well as information about converting existing bins. Copies of Bulletin 142-A can be obtained by checking No. 7448 on the coupon and mailing to this publication.

No. 7050—Trigger Unit on Gross Bagger

A new trigger arrangement with automatic cut-off is said to permit faster bagging with a semi-automatic gross bagger by the Richardson Scale Co. For the company's G-17 gross bagger, the new trigger arrangement holds the gate open longer, and on most free-flowing materials the trigger can be set for the exact weight desired, a company spokesman said, eliminating all trimming. Check No. 7050 on the coupon and mail it to secure details.

No. 7483—Equipment Leasing Plan

Nationwide Leasing Co. announces a special package leasing plan under which any combination of equipment may be considered one package and leased as a unit for three to five years. The package lease plan permits large and small firms to acquire $10,000 to $50,000 or more in equipment without capital investment, the

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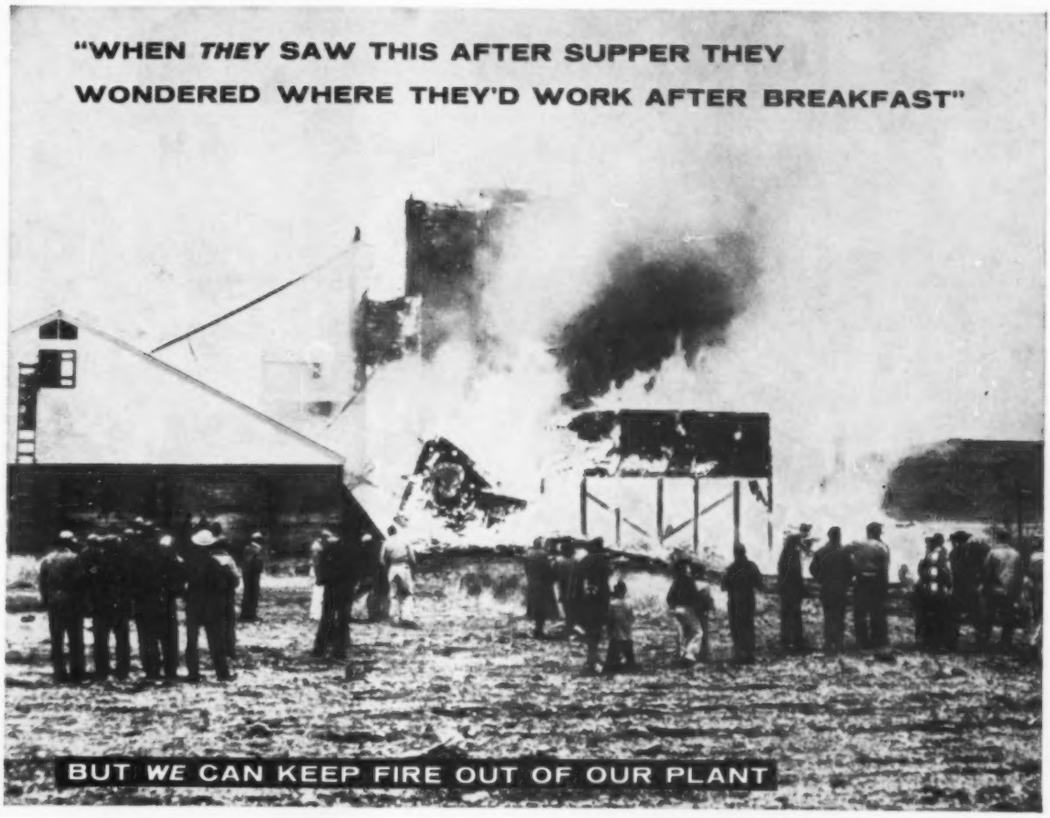
"WHEN *THEY* SAW THIS AFTER SUPPER THEY WONDERED WHERE THEY'D WORK AFTER BREAKFAST"



BUT *WE* CAN KEEP FIRE OUT OF OUR PLANT

• by reporting hazards and danger signs . . . choked elevator legs . . . unusual odors . . . bad bearings . . . hot grain • by keeping the place clean • by caring for extinguishers • by using protected portable lights • by not smoking where prohibited • by remembering what to do – in case

Fire can be kept out but can't always be put out

Mill Mutual Fire Prevention Bureau, 400 W. Madison St., Chicago 6, Ill. (NO 17, COPIES FOR POSTING ON REQUEST)

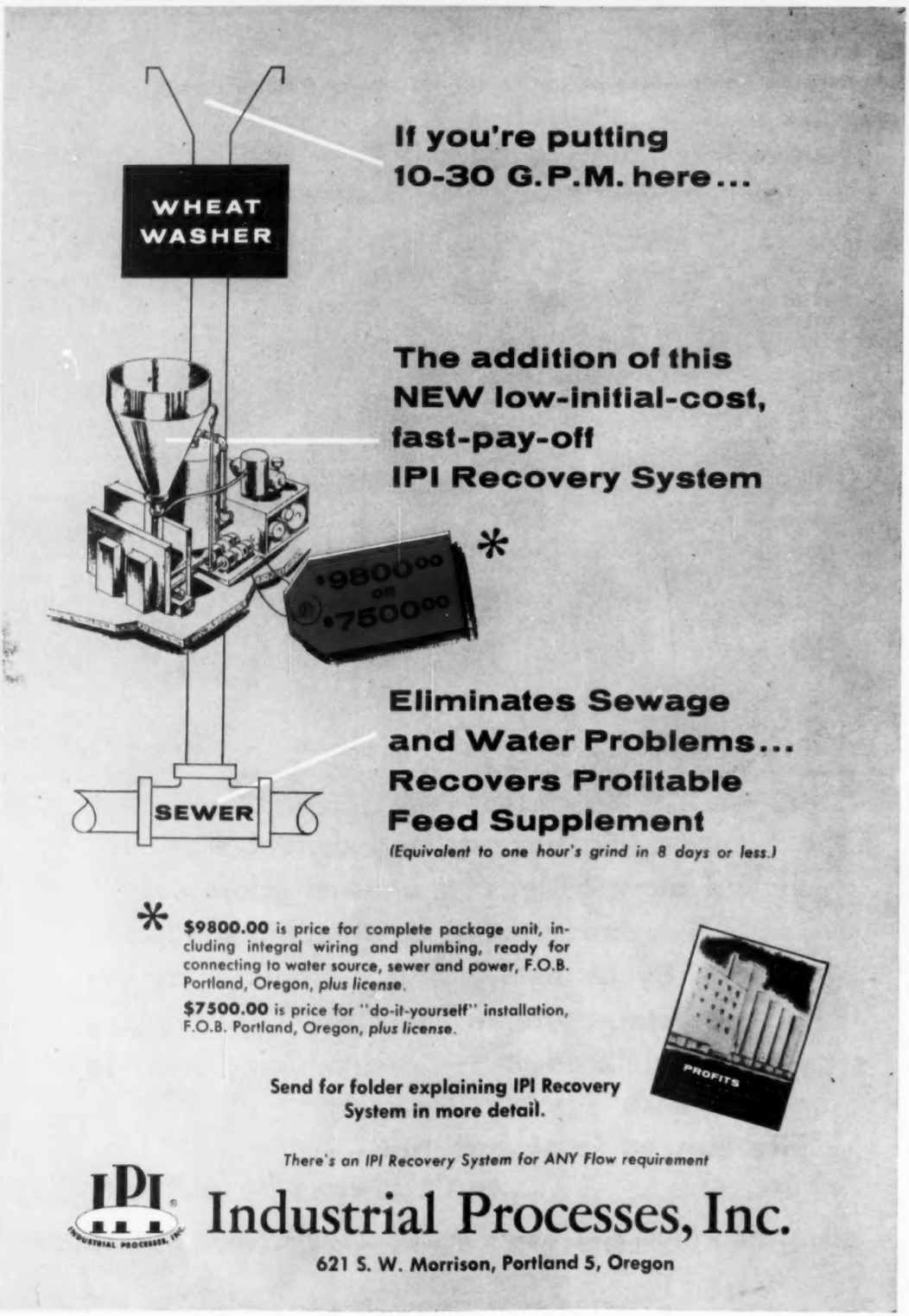
company says. The plan was developed to meet the need of milling firms to expand and modernize production facilities without depleting their liquid working capital, the company says, and any combination of equipment may be lumped together in one package, under one lease and with one monthly lease payment. For details, check No. 7483 on the coupon and mail.

No. 7481—Magnesium Bins

Tote Systems, Inc., announces the addition of magnesium Tote Bins as standard items in the Tote line. The bins are now available in four different materials — aluminum, carbon steel, stainless steel and magnesium. The magnesium containers are available in 42, 74, 90, 98 and 110 cu. ft. capacities. Other special sizes are fabricated upon request, the company says. Check No. 7481 on the coupon and mail for details.

No. 7632—Automatic Batching Control

A new method for automatic batching control has been introduced by Toledo Scale, Division of Toledo Scale Corp. The unit is referred to as "Batchboard" Remocon control, and is said by the company to afford the latest in proportioning control opportunities through automatic presetting of unlimited numbers of batch formulas. The unit eliminates the necessity for manual adjustment of individual weigh selectors to obtain the desired quantity of each ingredient in the batch. The systems are designed to provide control of the entire batching operations from a central remote location. Each unit is approximately 7 in. by 10 in. by 2 in., and contains contact holes, each hole representing a weight value. Plug wires are inserted into the appropriate holes to set up the desired batch weight of each ingredient for single or multiple scales. An individual "Batchboard" is used for each formula, and once the unit is wired, it can be used indefinitely without rewiring. Each unit is enclosed to prevent accidental change to the wiring. As many as 20 ingredients can be controlled by one "Batchboard." Each unit is numbered, representing one specific formula. To operate, a key operated power switch is turned on and the operator then selects the proper "Batchboard" and inserts it into the receptacle on the control panel. If multiple batches of one formula are to be delivered, the operator selects the number of batches desired on the preset batch counter. Any other standard Toledo proportioning control features can be integrated into a "Batchboard" Remocon system. For more complete details, check No. 7632 on the coupon and mail.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If you're putting 10-30 G.P.M. here...
The addition of this NEW low-initial-cost, fast-pay-off IPI Recovery System
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$9800.00 or $7500.00
Eliminates Sewage and Water Problems... Recovers Profitable Feed Supplement
(Equivalent to one hour's grind in 8 days or less.)
SEWER
* $9800.00 is price for complete package unit, including integral wiring and plumbing, ready for connecting to water source, sewer and power, F.O.B. Portland, Oregon, plus license.
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PROFITS
Send for folder explaining IPI Recovery System in more detail.
There's an IPI Recovery System for ANY Flow requirement
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Industrial Processes, Inc.
621 S. W. Morrison, Portland 5, Oregon

No. 9107—Welded Steel Pulleys

A new booklet, "Die Crown Welded Steel Pulleys," issued by Link-Belt Co. describes a new hydro-expansion-formed belt conveyor pulley that its makers say increases conveyor belt life, has a 25% greater strength, is concentric to within .030 inch and is free from crown welds.

The Die Crown welded steel pulley is formed in a die by hydraulic pressures for accurate control of crown contour and pulley diameter. They are also free from back-up welding bars. Belts are more easily trained

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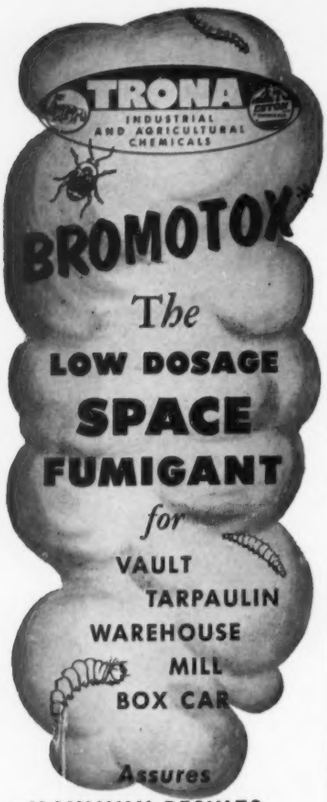

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The Versatile Fumigant

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FERGUSON FUMIGANTS

on the formed crown and true centering aids in initial belt settings.

The new publication gives detailed engineering and selection data. Information on lagged pulleys, shaft and pulley assemblies is also given. A copy of the booklet is available by checking No. 9107 on the coupon.

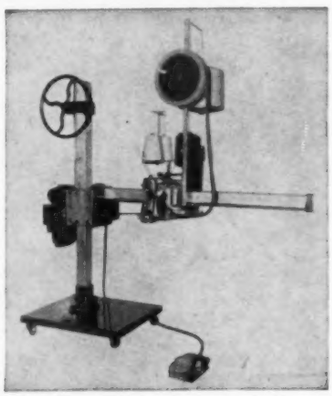
No. 7610—Half-Round Aeration Duct

Rolfes Grain Aeration Companies announces the introduction of a "half-round" aeration duct for use in

flat storage buildings. The duct has a 25½-in. diameter, and comes in 2-ft. sections. The galvanized duct is corrugated for extra strength. The unit is installed in a "sill assembly," an angle iron track which the 2-ft. sections fit into. The unit is shipped "nested," offering a savings in shipping costs and simplified storage, company literature said. The unit has been tested under a 45-ft. load of grain. The company also designs and manufactures a 30-in. half-round as well as 12-in., 18-in., and 24-in. full-round galvanized ducts. For details, check No. 7610 on the coupon and mail.

No. 7068—Sewing Machine Head

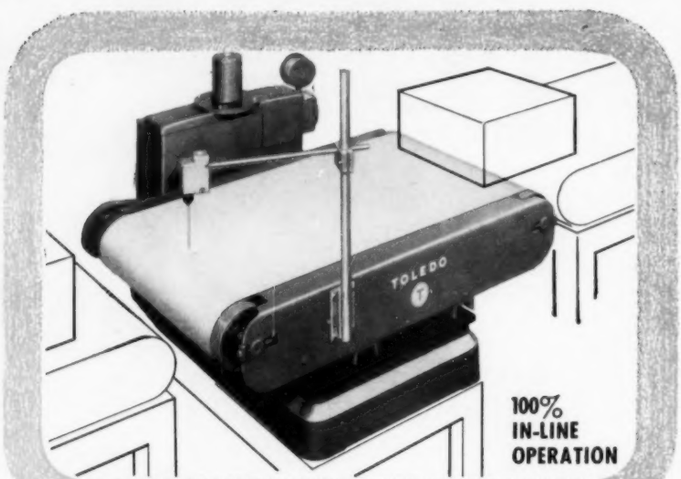
A portable traveling head unit for closing bags while they are on the



platform scale has been introduced by the Minneapolis Sewing Machine Co. It is claimed that one operator can fill, weigh and sew without moving the bag or changing his position. Forty inches of horizontal travel is provided. Over-all length of the standard unit is 6 ft., 6 in., the height is 6 ft. and the extended height with tape attachment is 7 ft. Check No. 7068 on the coupon and mail it to secure details.

No. 6946—Liquid Grain Fumigant

Frontier Chemical Co., division of Vulcan Materials Co., announced the development of a liquid grain fumigant under the trademark "Clorofume." The product, which gets its name from its chief ingredient, chloroform, is the result of four years of research and testing, the company said. Company literature listed the following advantages: High insect toxicity; greater grain penetrating power; savings of 20-30% per bushel of protected grain; safe handling, and no health hazard to human life when used with reasonable care. It is composed of three 100% active ingredients — chloroform, carbon bisulfide and ethylene dibromide. For further information about the product, check No. 6946 on the coupon and drop in the mailbox.



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Items 50 to 200 Lbs., to 40 per min.

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Items 5 to 50 Lbs., to 40 per min.

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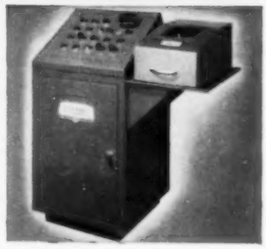
Get accurate net weight listing and totaling of bulk materials going into truck or carload shipments. Weighing is automatic. You save time, control costs and reduce claims. The Toledo control console which interlocks all elements of the system, may be remotely located for operating convenience. Ask for Bulletin 2490.



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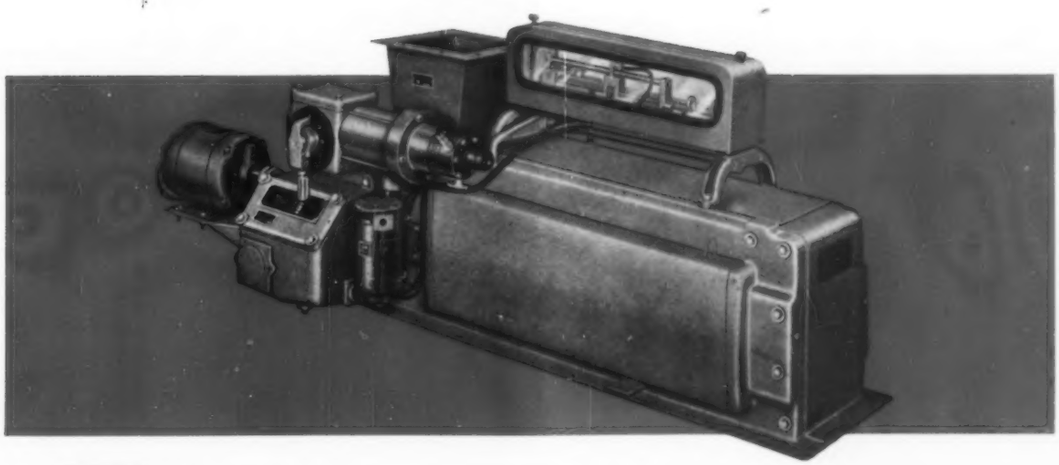

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